Report on the Vaccination throughout the Bombay Presidency and Sind for the years 1865 to 1868. 1869-70 & 1870-71

00133638

BOMBAY BRANCH
OF THE
ROYAL ASIATIC SOCIETY.
TOWN HALL, BOMBAY.

Digitized with financial assistance from
Government of Maharashtra
on 01 February, 2020

11/76/2

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

133658

FOR THE YEAR 1865.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Bombay:
PRINTED FOR GOVERNMENT
AT THE EDUCATION SOCIETY'S PRESS, BYCULLA.

1866.

00133638

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND

FOR THE YEAR 1865.

From the PRINCIPAL INSPECTOR GENERAL, Medical Department,

To the CHIEF SECRETARY to GOVERNMENT, General Department.

SIR,—I have the honour to submit to His Excellency the Governor in Council the annual report on Vaccination for 1865. It consists

1*st.*—of a brief statement of the general working of the department during the year;

2*ndly.*—of extracts from the reports by the Superintendents of Vaccination and by Civil Surgeons; and

3*rdly.*—of tabulated, figured results.

Changes among the Superintendents.

2. Two of the Superintendents were compelled to proceed to Europe during the year on sick certificate, viz. Assistant Surgeon Dick of the Northern Circle, and Assistant Surgeon Fleming of the Rewa Kanta. The departure of the former is much to be regretted, for he had not only devoted himself for some years to the subject of vaccination, and with marked success, but being a good linguist and a man of conciliatory manners, he had gained the confidence of the people of Gujerat. His duties for a time were performed by Surgeon Shepherd, the Civil Surgeon of Surat, but this was a mere temporary arrangement, and in December Assistant Surgeon Cook was appointed to officiate as Superintendent during Dr. Dick's absence. Assistant Surgeon Fleming was at first succeeded by Assistant Surgeon Alleyne, but he resigned the post towards the end of the year, and Assistant Surgeon

Welsh was nominated in December to officiate during Mr. Fleming's absence.

3. At the close of the year the Superintendents were as follows :—

Northern	Circle—	Assistant	Surgeon	Dick, M.D., (Europe S. C.)
Do.	do.	„	„	Cook, M.D., (Acting.)
Central	do.	„	„	Turnbull, M.D.
Southern	do.	„	„	Plumptre.
Sind	do.	„	„	Pinkerton, M.D.
Kattiawar	do.	„	„	Butler, M.D.
Rewa Kanta	do.	„	„	Fleming, (Europe S. C.)
Do.	do.	„	„	Welsh, M.D., (Acting.)
Presidency	do.	Sub-Assistant	Surgeon	Anunta Chundroba.

Total number vaccinated.

4. There is, I think, good reason to be satisfied with the amount of work performed, for while the number of vaccinations in 1864 was 332,894, the number for the past year was 358,198, showing an increase of 25,383.

5. It is due to Drs. Plumptre and Pinkerton to state that the largest portions of this increase are shown in the returns from their respective Circles, the Southern and Sind, and are mainly attributable to their excellent arrangements and great exertions. It should likewise be mentioned that there is an improvement in the Rewa Kanta, which hitherto, as stated in previous reports, had not been in a satisfactory condition. There was also a marked increase under the Civil Surgeons at Kurrachee, Kotree, Ahmedabad, and Sholapoor, but a considerable falling off at Sattara, Rutnagherry, Surat, and Rajkote.

Vaccination in Sind from local funds.

6. The greatest increase in any one Circle was in Sind, amounting to upwards of 16,000, including the work done by the recently formed local establishment. It was mentioned in the last report that, with the view of increasing the efficiency of the department in Sind, and of extending the benefits of vaccination more thoroughly and completely over every part of the province, the Commissioner had sanctioned a plan proposed by Dr. Pinkerton, the Superintendent, for appointing eleven vaccinators, to be paid out of local funds, as a supplementary aid to the Government establishment.

7. The arrangement has worked well, and gives promise of effecting much good, for it is believed that, with this increase, the establishment will be able to go over the whole province sufficiently often to keep the infant population protected. It came into operation in the early part of 1865. During

the first two months the newly appointed men were taught by the old vaccinators how to operate and keep their records, and generally the method of carrying on work. During the remainder of the year they vaccinated nearly 12,000 children, and the Superintendent reports that they have more than realized his expectations.

General accuracy of Returns.

8. Out of the total number of operations, about 8 per cent. proved either unsuccessful or doubtful. Thus out of 358,198 vaccinations, 332,176 are reported as successful. Every practicable means appear to have been taken by the Superintendents, both personally and otherwise, to test the accuracy of the returns received from their vaccinators, and there is good reason to believe that in the main they are correct. The testimony of the Superintendents on this point becomes stronger year by year. In his recent report, for instance, Dr. Butler states that throughout his tour in Kattiawar, he "did not find a single false return." Testimony to the same effect is borne by Dr. Turnbull, who reports that, though he visited 395 villages, and inspected upwards of 12,000 vaccinated children, he did not discover a single false name, although on each occasion the names of the children were read over, and he carefully examined their arms one by one. Dr. Pinkerton also states that, although he travelled nearly 1,700 miles, examined the work of 18 vaccinators in 400 villages, had the children's names called over from the registers, and at the same time saw the vaccination marks on their arms, he did not detect a single false name.

Occasional falsification of Returns.

9. Yet, notwithstanding the strong evidence thus brought forward, instances of falsification do occasionally come to light; and it is mentioned in the report from the Northern Circle, that while Dr. Dick was on his tour in Gujerat, he personally ascertained that the returns of two villages near Hansote had been falsified by a vaccinator. The man was in consequence brought before a Magistrate, under Section 182 of the Penal Code, and sentenced to one month's imprisonment. It is thus evident that the figures must not be regarded in the light of perfect accuracy, but merely as an approximation to it.

Sexes.

10. With regard to sex

193,510 were males and
164,688 were females.

This relative proportion corresponds very closely with that of previous years.

11. The castes were as follows :—

Castes.		
	Hindoos	259,064
	Mussulmans	78,450
	Christians	1,794
	Parsees	850
	Other castes	18,020

Infantile Vaccination.

12. Of the total number of operations, 232,099 were performed on persons above one year of age, and 126,079 on those below it. In other words, 64·8 per cent. of the former, and 35·2 of the latter. Compared with the returns of former years, this is so far an improvement, that it shows a slight increase both in the extent and in the relative proportion of infantile vaccination,—a fact of some importance, inasmuch as vaccination in early life affords a far greater security from small-pox than when resorted to at a later age.

13. The average per-centage of infantile vaccination in Sind was somewhat less than in the previous year, and was owing to operations having been carried on to a greater extent in new fields, such as Thurr and Parkur, and the Jacobabad districts, where the number of unprotected children above one year of age was much greater than in other parts of the province, which had been well gone over for many years. In the Deccan, on the contrary, where the prejudices of the people against early vaccination had always been stronger than elsewhere, the per-centage rose from 11 to 23, a fact of great interest, as seeming to prove that these prejudices are gradually subsiding. Throughout Gujerat the average rate was 54 per cent., being as usual higher than elsewhere, excepting in the town of Shikarpoor where it rose to 96, the highest rate ever recorded in this Presidency. This fact reflects great credit both upon the present and preceding Civil Surgeons, the explanation being that the inhabitants have been so carefully protected by vaccination for many years past, that the operations are now almost necessarily confined to children born within the year.

Good effects of unceasing attention to Vaccination.

14. It was mentioned in the last report that Shikarpoor was probably better protected against small-pox than any other town throughout the Presidency, and as a proof of the great advantage of unceasing attention to vaccination, it was stated that not a single case of the disease had occurred there for a long period. I may repeat this remark, for not a solitary case was met with during the year. The good effects resulting from this state of matters, moreover, are by no means confined to the town itself. They have become far

more extensive, for the Superintendent in Sind mentions in his recent report that the larger and more intelligent Zemindars are now more willing to use their influence in favour of vaccination than they formerly were, particularly in the neighbourhood of the town of Shikarpoor; and he attributes this feeling in a great measure to the fact of vaccination having been so steadily and continuously practised for years by the Civil Surgeon, and to the surrounding inhabitants having observed the immunity from small-pox, which has resulted therefrom.

Small-pox.

15. With regard to the prevalence of small-pox, the reports received from all quarters show that, with the exception of Aden and Ahmedabad, there was much less of that disease throughout the entire Presidency than in the previous year, and that where it did prevail, it assumed in most places a milder form than usual. In the Northern Circle it is reported to have made its appearance in a few villages in the Cambay and one or two other districts, but not elsewhere. In Kattiawar Dr. Butler mentions that it prevailed in several villages in the Dedan talooka, particularly at Khater Kotree, where it proved fatal to upwards of a hundred children, but he was assured by the Patel that not a single vaccinated child had died. Throughout the Deccan there appears to have been very little indeed, and nowhere in an epidemic form, except in a few villages near Dhoolia. In the Concan no notice is taken of its prevalence except at Vingorla, where the Deputy Inspector General reports its having raged among the families of the fishermen; so much so indeed that these people,—who, of all classes, are the most inveterate in their antagonism to vaccination,—were roused for a moment to a sense of danger, and eagerly sought the protective power of vaccination. In Sind there was no epidemic small-pox in any part of the province, and only a few sporadic cases were reported.

16. At Aden it prevailed, as usual, to a great extent. It is in fact a disease from which that place seems never to be entirely free, owing, as mentioned by the Civil Surgeon, to its liability to contamination from Africa and other parts of the East. Unhappily, too, from some peculiar atmospheric or other causes difficult to understand, the lymph at that station seems not unfrequently to lose its specific property so completely, that attempts to keep up an unfailing supply by continuous vaccination have repeatedly failed, so that for a considerable portion of the year vaccination was unavoidably suspended. Frequent supplies of lymph were sent from here, but in scarcely a single instance did it prove efficient.

17. In Bombay itself the mortality from small-pox was less than during the two previous years. In 1863 the deaths from this cause were 1,113, and in 1864 they reached 1,678, while last year they were only 561. It must not be supposed, however, from this statement, that I wish to imply that the success of vaccination was really much greater in 1865 than in the two preceding years. Far from it, for the actual increase in the number of vaccinations was only 334. Moreover, the statistics of small-pox in Bombay show that the number of deaths since 1848, (when Dr. Leith first commenced his valuable mortuary returns) has greatly fluctuated, the wave of mortality, from some inexplicable cause, rising every second or third year to its greatest height and then receding, and this without the least connection apparently with the actual state of vaccination. Facts of this nature lead to the conclusion that, apart from the progressive condition of vaccination, the extent and virulence of small-pox are dependent on certain epidemic influences, of the precise nature of which we are at present profoundly ignorant.

18. Owing to the want of accurate registration throughout the mofussil, it is only of the Presidency town itself that any statement can be made with confidence, relative to the precise extent of mortality from small-pox; and recollecting that in 1863 upwards of 2,000 people died of this disease in London, where vaccination has been compulsory by law since 1854, I think it must be admitted that there is no reason to be surprised at the amount of deaths from this cause in Bombay, where vaccination is not compulsory.

Inoculation.

19. In the last report allusion was made to the mischievous practice and fatal consequences of inoculation, and I suggested the desirability of procuring a legal decision on the point whether, or not, sections 269 and 270 of the Penal Code gave Magistrates power to take proceedings against inoculators, as differences of opinion appeared to exist on the subject. The Magistrate of Tanna, in whose districts inoculation was said to be in practice, was directed by Government to report on my remarks. He replied by sending copy of a letter addressed by his predecessor to the Superintendent Central Circle, in which it was stated that "to render a man amenable to these enactments, his act must be proved to be either illegal, negligent, or malignant, and that the only chance of conviction rested on being able to show that the act was illegal, for it could not be either malignant or negligent." It then said that "the High Court had ruled that no general order of the Magistrate, declaring the practice of inoculation illegal, was valid,"

and added that it was "a question whether a special order, served on the practitioner, would be admitted to be more cogent."

20. This reply from the Magistrate having been sent to me by Government for any remarks I might wish to make, I referred to paragraphs 25 to 28 of the report for 1864, in which were stated certain facts proving that the practice of inoculation did great harm by spreading and perpetuating small-pox, and that it also caused great mortality. I, at the same time, suggested whether a Legislative enactment might not be passed to render such practice penal, if the provisions of the Code were ineffectual for the purpose.

21. I was subsequently informed by Government that, under the existing law, parties practising inoculation could not be proceeded against, and that Government would await the receipt of further information before deciding on the expediency of having recourse to legislation.

22. It, therefore, now becomes necessary to submit all the information on the subject which the reports from the Superintendents for the past year will enable me to supply. It is reported from the Northern Circle that Dr. Dick, while on his tour in the districts of Bulsar and Bugwara, found that inoculation was much practised by the caste of Ghatees, and that they secure encouragement, if not direct aid, from some of the village Patels, to whom they offer a small fee for each child inoculated. Dr. Dick also noticed many recently inoculated children, and traced some deaths, and also some cases of small-pox, as the direct results of inoculation. This he officially reported to the Magistrate, but the result is not mentioned. Dr. Butler, the Superintendent in Kattiawar, mentions that he visited two villages where inoculation had been performed, but that he could not find any traces of the inoculator. He adds that this was the first time he had met with any cases of inoculation in that province. In no other part of the Presidency was a single case brought to light during the year, not even in Sind or in the Tanna Collectorate, which in previous years were its two strongholds.

23. It will now remain with Government to decide whether it will be sufficient, for the purpose of ensuring the abolition of the practice, "to trust to the gradual spread of knowledge, and to the appreciation by the people of the practical benefits of vaccination," or whether it "may be expedient to interfere."

24. In connection with this subject, it should, I think, be recorded in this place that it was suggested by Government that men, who had hitherto gained a livelihood by the practice of inoculation, might probably be induced to

Inoculators.

take employment as vaccinators, and that inoculation might thus be superseded by vaccination. It was further suggested that if payment were made by successful results, no harm could result from a trial. The attention of the Superintendents was accordingly directed to the subject.

25. From the reports received from these Officers it appeared that the Superintendent in Sind had personally, on several occasions, endeavoured to induce inoculators to take service as vaccinators, but without success. He stated his belief, however, that there are now very few left in that province, and that with the increase recently made to his establishment, inoculation would cease. He seemed to think that the chief reasons for their declining to take service were the smallness of the pay, and the restraint of being kept regularly at work. He mentioned having been told that in former years an inoculator would make hundreds of rupees in a season, and that a rich Zemindar frequently gave him valuable presents for inoculating his family.

26. With regard to Gujerat, it was reported that there was only one known inoculator, and that he refused employment as a vaccinator. In the Southern Circle no case of inoculation had come to light for a long period while in the Central Circle inoculators appeared to confine their work to the Tanna collectorate. It was further reported that they are not only men of low caste and wholly uneducated,—points in themselves sufficient to bar their employment as vaccinators,—but that they are of mature age, and would consequently be unlikely to attend to the close training requisite for making vaccinators, and to the discipline required to keep them at work.

27. With regard to payment by results, it was the unanimous opinion of the Superintendents that the plan would be found impracticable, inasmuch as to guard against fraud, it would necessitate the inspection, by the Superintendent, of every vaccinated child,—a course of proceeding which, with the present number of the inspecting staff, would be simply impossible, while to pay by results, on the word of the vaccinator, would be to offer inducements to falsify returns.

28. It appeared also from the records in this office, that some years ago an attempt was made to introduce inoculators as vaccinators, but that the plan was abandoned in consequence of failure. On my representing these circumstances to Government, and on my expressing an opinion that it would not be advisable to make any further attempt in this direction, it was decided that the difficulty of establishing an effectual system of check precluded the possibility of introducing the plan of payment by results.

29. Municipal vaccination, which was introduced in 1863, is gradually making progress. The plan was suggested by me as being calculated to identify local municipal bodies with efforts to render the protective system of vaccination more extended, efficient, and complete. It was first brought into operation by Dr. Plumptre in the Sattara districts, and has been extended by him to Gudduk and Bettigherry in the Dharwar, and to Gokak in the Belgaum collectorate. The number of vaccinators supported at the expense of municipalities in these places, and in the Sattara districts, has increased to eight, and the number of operations to upwards of 5,000. The plan has succeeded better there than in other parts of the Presidency, a circumstance which is mainly attributable to the judicious and active interest taken in the subject by the Superintendent.

Vaccination by Municipalities.

30. It has recently been adopted in Gujerat, where the municipality of Ahmedabad now employs two vaccinators and two peons, and that of Dakore, in the Kaira collectorate, one vaccinator. The arrangement was made in the former town by the influence of Dr. Wyllie, the Civil Surgeon, and in the latter by that of Dr. Dick, the Superintendent. The other municipalities in the Kaira collectorate are said to be "far too poor and pressed for funds" to enable them to contribute to expenses of this kind. It is reported, however, that there is a probability of arrangements being made for the engagement of a vaccinator by the municipalities of some of the principal towns in the Ahmedabad collectorate, and also of Sholapoor and Beejapoor. Municipal vaccination has now been introduced, not only into the Sattara districts, but also at Hooblee, Gudduk, Bettigherry, Belgaum, Gokak, Tanna, Poona, Kotree, Ahmedabad, and Dakore.

31. Except in Canara and at Aden, the vaccine lymph was well reported on throughout the Presidency, the resulting vesicles being generally well-developed and well-marked. In one or two instances, in which there appeared to be slight tendency to deterioration, fresh lymph was immediately procured and introduced. The Superintendent in Sind reports that only on one occasion had he reason to find fault with it. In 1864 he received a supply from England in capillary tubes, and the result was so satisfactory that he caused it to be spread over the province, so that with one or two exceptions all his men are now working with it. In Canara, however, the Superintendent found the lymph so much deteriorated that he was compelled to suspend work, until a fresh supply had been obtained from Belgaum and Hooblee.

Character of the vaccine lymph.

32. Complaints have been received, as in former years, of the difficulty, in a few places, of keeping up a sufficient supply of lymph so as to be always ready for use. In Bombay itself this want was recently reported to be felt with increasing pressure, owing mainly to the strong repugnance felt by the parents of vaccinated children to allow lymph to be taken from their arms for the purpose of vaccinating other children,—a repugnance which appears to be felt as strongly by the educated classes, as by the uneducated.

Want of sufficient lymph.

33. As an illustration of this feeling, it may be mentioned that the Superintendent at the Presidency, a Sub-Assistant Surgeon, recently mentioned that during last year nearly a thousand children belonging to the educated and upper classes were vaccinated, but that only three of their parents would allow lymph to be taken from their arms. He stated at the same time that, in his opinion, " nothing short of legislative interference would be able to meet the exigency, and that there need be no fear of complaints being made of interference with religious prejudices." There are many considerations which would probably disincline Government to move in this direction at present, but it seems nevertheless desirable to record the opinion thus expressed by a very intelligent Native, who has for several years been Superintendent at the Presidency, and who is intimately acquainted with the feelings of his fellow-countrymen of all castes on the subject.

34. Partly for the purpose of diminishing the difficulty on this point, it was suggested in the last report that the Secretary of State for India might be requested to communicate with the National Vaccine Establishment in London, with the view of procuring and of forwarding an annual supply of lymph. Moreover, as the experience of India showed that lymph, transmitted on ivory points, almost invariably proved useless, it was particularly pointed out that it ought to be forwarded solely in " *vaccination tubes,*" a very small number being sent to Aden, and a larger supply to Bombay. Government were pleased to approve of these suggestions, and to communicate with the Secretary of State for the purpose of having them carried into effect.

Application to Secretary of State for India for lymph, and result.

35. About the close of the year, a small packet of lymph was received from the India Office, but I regret to say it consisted solely of ivory points, there not being a single tube. These points were immediately distributed to the Civil Surgeon at Aden, and to the Superintendents of the Sind, Northern, Central, Southern, and Presidency Circles, with instructions to adhere rigidly to the directions for using the lymph, which were enclosed in the

packet, and to report the result. Replies have already been received from four of these officers, and I much regret to state that, although the lymph appears to have been used in the most careful manner in vaccinating both Native and European children, failure was the result in each case. So anxious was one of the Superintendents to meet with success, that in addition to making the most careful selection of healthy children, and to taking the usual precautions, he actually promised a sum of money to each of the parents of those children, on whose arms a true vesicle should appear. I would therefore again very earnestly request that the next supply may be forwarded solely in tubes.

Vaccination at the Presidency.

36. In the Resolution passed by Government on the last report, some remarks were made on the small number of vaccinators in the Presidency town, and I was requested to make inquiry on the point, and to suggest how the want might be supplied. In accordance with these instructions, I communicated with Dr. Giraud, then Honorary Inspector of Vaccination at the Presidency, and having ascertained his views, I reported on the subject to Government, the result being that, on the recommendation of His Excellency in Council, the Government of India, towards the close of the year, sanctioned an increase from three to six.

37. It may perhaps be well to place on record, in this place, a few circumstances connected with vaccination at the Presidency, which led to this result.

38. At the close of 1858 the number of vaccinators was ten, but at that period there was no paid Superintendent, and consequently not that active supervision of operations and of their results, which was requisite. In January 1859, however, a new scheme was introduced, with the sanction of Government, which originated with Dr. Peet, who at that time was the Honorary Inspector of Vaccination. The establishment of vaccinators was reduced from ten to six, and a Sub-Assistant Surgeon was appointed to perform the duties of Superintendent. Domiciliary vaccination was put a stop to, and vaccination at stations, under the direct supervision of the Superintendent, was introduced. The island was divided into six districts, to each of which a vaccinator was appointed. The result of the plan was to be reported on after three years.

39. In August 1859, however, eight months after its commencement, the number of vaccinators, at the recommendation of the local Superintendent, (which was approved of by the Honorary Inspector) was reduced to three, as "the experience of the past six months has fully shown that the number of

vaccinators now attached to the establishment is greater than what is actually required, seeing that all the vaccine operations are performed by the Superintendent."

40. In January 1862 the operation of the new system of vaccination was reported on by Dr. Peet, who stated that "the increase in the numbers vaccinated during the three years, now reported on, as compared with the two immediately preceding periods of the same length, is about 2,000. If this had been the sole result of the reorganization, it might perhaps be viewed as meagre and unsatisfactory. The main object was a trustworthy system, but it was hoped that this would not be incompatible with the extension of the benefits of vaccination to a larger number of persons." Dr. Peet then added, "there is, I think, conclusive evidence that an honest and trustworthy system of vaccination has been substituted for one that was unsatisfactory and delusive. It cannot, however, be denied that the increase in the number vaccinated has fallen short of what was anticipated."

41. This was written in 1862, since which time vaccination in Bombay has not materially increased in numbers. Though there is, no doubt, a better feeling than formerly towards vaccination, it has not yet reached that point at which the majority of parents will, unasked, bring their children to be vaccinated, and there is in consequence required from the native vaccinators a large amount of work in finding out children, and inducing their parents to bring them to the stations.

42. Dr. Giraud, who succeeded Dr. Peet, stated his opinion that three vaccinators were inadequate to perform the duties required of them, and which, according to existing rules, are to visit as many as possible of the houses in which children, who have been vaccinated, live; to bring to the notice of the Superintendent every instance of failure, or of irregularity of the vesicle; and to make himself acquainted, as far as may be practicable, with the number and residences of the children in his division who have not been vaccinated. He therefore recommended that as Bombay is divided into six districts, each with its vaccinating station, there should be six vaccinators, one for each station and district. This modification was adopted, and has recently been carried into effect.

Assistance from Civil and Political authorities.

43. It gives me much pleasure to state that the Superintendents, generally, express their acknowledgments for the cordial support they received from the Civil and Political authorities. Dr. Butler also pointedly mentions that the Native Chiefs in Kattiawar gave him more assistance than during any previous year.

44. It likewise affords me great satisfaction to report that the Superintendents, without a single exception, worked throughout the year with a diligence and earnestness which could not be surpassed, and which well entitle them to the favourable notice of Government.

Services of Superintendents.

45. In justice to the body of vaccinators, it must also be mentioned that, with a few exceptions, their conduct during the year has been highly spoken of by the Superintendents and Civil Surgeons.

Conduct of Vaccinators.

46. Having now concluded my statement of the working of the department during the year, it becomes necessary, previous to closing the report, to place on record certain changes recently made in its organization.

Reorganization of the department.

47. It will be recollected that in 1861 the department was modified to the extent of reducing the number of vaccination "Divisions," into which this Presidency was at that time mapped out, from eight to six, and of introducing Native Sub-Assistant Surgeons as Deputy Superintendents a post which had not previously existed. Two divisions were in consequence absorbed into others, and the services of the two Assistant Surgeons, who were the Superintendents, were placed at the disposal of Army head quarters. Thus the Concan division was broken up and added to the Central and Southern districts, while the two divisions in Gujerat were united into one. The term "Division" was at the same time changed into that of "Circle."

48. With the view of compensating for this loss of European supervision, it was intended by Government that each of the three most extensive Circles should be provided with two Deputy Superintendents. Their chief duties were to assist the Superintendent in the inspection of the vaccinators, to explain to the people of the districts, in which they might be employed, the objects and benefits of vaccination, and to encourage its diffusion by persuasion and by all other legitimate means.

49. This arrangement was made by Government during the time of my predecessor, but not on his recommendation. On the contrary, Dr. Rooke maintained that to diminish the amount of European agency was to impair the efficiency of the department.

50. As mentioned in previous reports, the new system worked badly. The Sub-Assistant Surgeons disliked the nature of their new appointments, even though carrying with them increased emoluments. The main objection on

the part of some was the necessity of the almost constant travelling which was involved, while to others the duty was distasteful as estranging them from the practice of the profession for which they had been educated.

51. On one occasion, in particular, very convincing proof was given of this strong dislike. With the view of filling up some vacancies in the post of Deputy Superintendent, I found it necessary to ascertain how many Sub-Assistant Surgeons, then employed by Government in different parts of the mofussil in charge of Dispensaries, would voluntarily enter the department. The result showed that ten out of twelve declined, while before long the two, who did enter, begged to be allowed to resign.

52. The scheme thus proving an entire failure, it became necessary to lay the subject before Government. The result was the abolition of these appointments, and a modified return to the system which was in operation before they were made. Some of the Circles were accordingly re-arranged, and the amount of European agency was increased to the extent to be now stated.

53. It was mentioned, in paragraph 47, that the two divisions, formerly existing in Gujerat, had been united into one. I did not propose to disturb that arrangement by dividing the province again into two, because in the meantime a Medical Officer had been sanctioned for the Gujerat Bheel Corps at Dohud, and as he was nominated at the same time Superintendent of Vaccination in the Rewa Kanta and Punch Mahals, the former of which had previously formed part of the united Gujerat Division, its extent had in consequence been considerably reduced. It was therefore not considered too great for efficient supervision by one Superintendent, particularly at a time when the number of medical officers was, and still is, insufficient to meet, adequately, even the ordinary requirements of the Civil and Military departments.

54. It was different, however, with the Central and Southern Circles, which embraced the whole of the Deccan, Southern Maratha Country, and Concan. The great extent of each of these Circles rendered it impossible for a Superintendent, however zealous and energetic, to effect that thorough supervision over the vaccinators, or to exercise that strict personal insight into the working of the department, which is so essentially necessary.

55. I therefore suggested that these two Circles should be divided into three, by separating from them the collectorates of Tanna and Rutnagherry

and the Sawunt Waree State, and by forming these into a third. Circumstances did not at that time, nor do they now, admit of more being done in the way of sub-division. I trust, however, that, at some future time, means may be found for still further reducing the extent of all the larger Circles, for it is obvious that the smaller the district in charge of a Superintendent, the greater would be his opportunities for more closely and repeatedly inspecting the work of each of his vaccinators,—a subject of the utmost importance, inasmuch as the value of the department greatly depends on unceasing personal inspection.

56. Government were pleased to sanction the arrangements proposed. The Bombay Presidency is therefore now divided into the following eight Circles, each being in charge of an Assistant Surgeon, except at the Presidency, where the Superintendent is a Sub-Assistant Surgeon :—

I.—The NORTHERN CIRCLE, consisting of the Collectorates of Ahmedabad, Kaira, and Surat, the Sub-Collectorate of Broach, and the territories of the Chiefs in the Mahee Kanta, and of Rajpeepla and Pahlunpoor.

II.—The CENTRAL CIRCLE, consisting of the Collectorates of Khandeish, Poona, Ahmednuggur, and Kulladghee, the Sub-Collectorate of Sholapore, and the Peint State.

III.—The SOUTHERN CIRCLE, consisting of the Collectorates of Sattara, Belgaum, Dharwar, and Canara, the Kolapoor State, and the territories of the Jagheerdars in the Southern Maratha Country.

IV.—The WESTERN CIRCLE, consisting of the Collectorates of Tanna and Rutnagherry, and the Sawunt Waree State.

V.—The SIND CIRCLE, consisting of the province of Sind.

VI.—The KATTIAWAR CIRCLE, do. do. of Kattiawar.

VII.—The REWA KANTA CIRCLE, consisting of the territories of the Chiefs in the Rewa Kanta, and of the British territory of the Punch Mahals.

VIII.—The PRESIDENCY CIRCLE, consisting of the island of Bombay.

57. In addition to this arrangement, each zilla town is provided with a vaccinator, who works under the eye of the Civil Surgeon.

58. Assistant Surgeon Blanc has been appointed Superintendent of the new Western Circle, but as he is detained on special duty under the orders of the Political Resident at Aden, and as the Medical Department is at present too weak in numbers to admit of an Assistant Surgeon being spared to officiate, the new arrangements are in abeyance pending Dr. Blanc's arrival.

I have the honour to be,

Sir,

Your most obedient Servant,

M. STOVELL, M.D.,

Principal Inspector General, Medical Department.

Bombay, 31st March, 1866.

INDEX TO THE FOLLOWING REPORTS.

VACCINATION UNDER SUPERINTENDENTS— PAGE

Central	Circle..	1
Southern	do...	4
Northern	do...	8
Sind	do...	9
Kattiawar	do...	14
Rewa Kanta	do...	15
Presidency	do...	16

VACCINATION UNDER CIVIL SURGEONS—

	PAGE		PAGE
Tanna ..	17	Honore ..	24
Poona ..	17	Ahmedabad ..	24
Ahmednuggur ..	18	Kaira ..	25
Sattara ..	19	Surat ..	26
Sholapoor ..	19	Broach ..	26
Dhoolia ..	20	Rajcote ..	27
Nassick ..	21	Kurrachee ..	27
Belgaum..	21	Hydrabad ..	28
Dharwar..	22	Shikarpoor ..	29
Kolapoor..	22	Kotree ..	29
Rutnagherry ..	23	Kutch ..	30
Vingorla..	23	Aden ..	30

APPENDIX—

Vaccination under Superintendents in British Territory ..	Table No. 1
Vaccination under ditto in Native ditto	No. 2
Vaccination under Civil Surgeons	No. 3
General Abstract of Vaccination	No. 4
Table of Ages	No. 5
Employment Returns of Superintendents of Vaccination	No. 6

VACCINATION UNDER SUPERINTENDENTS.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D.
Establishment.—Thirty-six Vaccinators (Government).
Two Vaccinators (Native Chiefs).

ESTABLISHMENT.	YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government	1864	69,299	....	....	66,141	95·4
	1865	63,251	....	6,048	59,350	93·8
Native Chiefs ..	1864	2,550	....	....	2,334	91·5
	1865	1,915	....	635	1,763	92·1

Of the total number 33,526 were males and 29,725 were females, or respectively 53·0 and 47·0 per cent. This shows that the males still preponderate, and also that there is a fractional falling off in the number of females, as compared with males, vaccinated during the past year.

In the 8th paragraph of my report on vaccination for the year 1864, I expressed my regret at the yearly decrease in the number of infants or children under one year of age, operated upon, or rather of the number of them shown in the Returns; but at the same time I remarked that the age of the child was, in my opinion, incorrectly given, and that I hoped to be able to show an increase in the Returns for 1865; such has been the case, 14,958 persons have been operated upon under, and 48,293 above, one year of age, thus giving respectively 23·6 and 76·4 per cent. the total number, and showing an increase in the former of 12·2 per cent. a very satisfactory increase. I think a proceeding which I adopted in the end of 1864, and carried out during the past year, has had some effect in increasing the number of infantile vaccinations. It is this: I called for names of all children under one year of age, from the Koolkurnees of villages I visited, and also those within a reasonable distance of them. These yads I forwarded, along with others, to the vaccinators.

The lymph has generally been good throughout the Central Circle, and the vesicles normal. Husband's tubes have been very largely used during the year, and the lymph sent in them to numerous applicants, such as medical officers, both in and out of the Presidency, Apothecaries, Missionaries, and other private persons, has, except in one or two instances, been invariably successful.

With the exception of the indifference of the people, and want of assistance on the part of many Patels and Koolkurnees, few obstacles exist to the progress of vaccination. But this very indifference which in Pabul, Bhimthurree, and eastern portions of the Jooneer and Khair talookas of the Collectorate of Poona, almost amounts to opposition, leads very much to the gradual deterioration of lymph. I have often wondered at and admired the way in which many vaccinators keep up their vaccine lymph. It is done only by much travelling and hard work, which, were vaccination compulsory, would be very much diminished. It is compulsory in Britain, and as Mamlutdars and other native officials have informed me, and as is proved by all castes submitting their children to be vaccinated, that no religious or other objection exists to vaccination, I cannot see any reasons against, but every thing in favor of, making it compulsory in India also. Of this I am certain, that until it is made so, natives will never have the faith in it they ought to.

That prejudices against vaccination do exist amongst the native population is well known. A most intelligent man, Mr. Ruttonjee Nowrojee, Catechist of the Church Missionary Society stationed at Yeola, in the Ahmednuggur districts, has, in a communication to me, given a very remarkable instance of one; I give it in Mr. Ruttonjee's own words, he says: "A ridiculous report has been spread by some fanatical Mahomedans that some remarkable personage is to make his appearance in the world during the latter days, and who will be known by milk oozing out of his arm, instead of blood, when vaccinated. Hence Europeans, say they, being anxious to discover that extraordinary being, lavish so much money and labour in persuading the people to vaccinate their children.

Vaccine tubes have been extensively used in transmitting lymph by post to persons both in and out of the district, but they have generally been filled by myself. During the current year it is my intention to distribute a few tubes to each vaccinator, and call for one, filled and and sealed, monthly. At the end of the year a prize is to be given to the person who, in my opinion, has best succeeded in filling, sealing, and packing them, for transmission by post. The quality of the lymph will also be taken into consideration in awarding the prize.

The tour during the past year has been a very extended one. It includes all the Ahmednuggur, nearly the whole of the Poona Collectorate, and a considerable portion of the Collectorates of Kulladghee and Khandeish. From Churchun in the Kulladghee Collectorate I proceeded eastwards inspecting the work of General No. 168, which though small in amount, was exceedingly well executed, and his books, &c., were correct and well kept, I then crossed the river Bheema into the State of Akulkote. On the work of the Raja's vaccinator here employed I reported very unfavorably in my last, and it is unnecessary to say more here than that he was removed, on my recommendation, by the Rajah, and another appointed in his stead. From Mr. Burjorjee the Magistrate of Akulkote, I then, and have since, received much and very intelligent assistance, and but for this I am sure the small number vaccinated would have been much smaller. From Akulkote I travelled by stages direct to Marheh *viâ* Sholapoor and Mohol, there being no vaccinator employed between those two places. Learning the fact that no vaccinator had been employed in the Sholapoor Hawele talooka for several years, I immediately made arrangements for one being sent, and this man has been successfully working there during the past year. In the month of February I made the circuit of the talookas of Marheh and Kurmulla, of the Sholapoor Sub-collectorate, and examined the work of General Nos. 23 and 223. The work of these vaccinators was very satisfactory, but especially that of the latter, who, though quite a young man, I consider one of the most careful and expert vaccinators in this Circle. In the month of March I left Kurmulla

and travelled through the Kurjut, Jamkher, and a part of the Nuggur Hawele talooka. In Kurjut I examined some old work of General No. 13, and in the other talookas the recent work of General Nos. 215 and 237. In paragraph 10 I have already alluded to the incorrectness of the Returns of 13 and 215 in regard to age. In other respects the work of General Nos. 13 and 237 were found very correct, and 215 only moderately so. Leaving Ahmednuggur, where I was detained on account of sickness, I, in April, examined the work of General No. 237, in the remaining part of the Nuggur Hawele talooka, and also the work of General Nos. 160, 201, and 110 in the talookas of Rahoorie and Newasee; Nos. 160 and 110 were satisfactory, except in regard to age. But that of General No. 201 was not so, and I recommended his removal from the service, which was acted on. In the month of May I visited the Sungumner and Ankola talookas of the Collectorate of Ahmednuggur, and the Jooncer talooka of the Poona Collectorate, and inspected the work of General Nos. 53, 207, and 37; the former was moderately correct, and the latter two very correct, and lymph good and active. After inspecting a few villages in the Khair talooka, the work of General No. 23, I entered Poona for the rains, and while there continued monthly to inspect the work of General Nos. 40 and 263, employed in the Hawele talooka around Poona. In the month of July I went to Nassick to inquire regarding the Penth vaccinator who has since died. Having determined to visit and inspect the work of the vaccinators employed in the Collectorate of Khandeish, I, in the beginning of November last, went by train to Nassick, thence by stages to Nephar and Yeola, inspecting the work of General Nos. 225 and 13 *en route*. Both were satisfactory. During December I inspected the work of General Nos. 214,144,13, and 269 in the talookas of Neola and Chandore. All were satisfactory and the lymph good. Having finished the examination of these I left the Ahmednuggur Collectorate and entered that of Khandeish, and travelled through, and inspected the work of General Nos. 225 and 60 employed in the talookas of Baglan and Malligaum. Both were in a very satisfactory state.

During the year I have travelled 1,837 miles, examined the work of 21 vaccinators, visited 395 villages, and inspected 31,587 children. Thus it appears that for each vaccinator whose work I inspected I visited 19 villages, a number sufficient to give a very good idea of his work. Of the children inspected 12,373 had been vaccinated, 10,949 had been attacked and were marked by small-pox, and the remainder 8,267 were found unprotected. Of the latter lists were made in every village, and signed by the Patel and Koolkurnee, and were sent to the vaccinators for their information. The labour and exposure to the sun which the writing of these names entails may be imagined but cannot be described.

My object in examining all the children of the village whether protected or unprotected, was to gain some idea as to the proportions vaccinated, protected by small-pox and unprotected. As will be seen, though the number vaccinated preponderated yet the numbers of the others were little short of it. But the relative proportion will be best understood by giving the proportions per cent. These numbers, however, must be understood to refer to children under ten years of age only. Regarding those above that age I can give no data.

The proportion expressed by per-centage, there is—

Vaccinated children	39.1
Protected by small-pox.....	34·6
Unprotected	26·1
	99·8

The number unprotected seems large, and must be taken only as an average and an approximation, as indeed the others may also.

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon F. H. PLUMPTRE.
Establishment.—Twenty-nine (Government).
Twenty-three (Native Chiefs).
Eight (Municipal).

ESTABLISHMENT.	YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government	1864	34,708	....	....	32,767	94·4
	1865	41,986	7,278	....	39,779	94·7
Native Chiefs ..	1864	18,816	....	....	17,345	92·3
	1865	17,142	....	1,674	15,912	92·8
Municipal	1864	2,834	....	....	....	....
	1865	5,049	2,215	....	4,524	89·6

This Return shows a satisfactory increase of the progress of vaccination in the Southern Circle. This increase is not so much marked if compared only with the year immediately preceding, as it would be were it contrasted with former years. It is not necessary to go back many years to show this contrast. I will only take the year 1862, the one during which Dr. Asher held the office of Superintendent of this Circle, under whose control a higher number of operations was performed than had ever been previously recorded, the total number then shown of the Government and Jaghcerdar establishments combined being 47·139. The past year gives the total number as 64·177, an increase of no less than 17·038. A considerable share of this increase has been contributed by the operations performed by the vaccinators employed and paid for by some eight of the Municipalities in this Circle. Putting the operations of this class aside, the Returns still show that, so far as the Government establishment is concerned, although its strength has been slightly increased, compared with 1862, the working of the whole shows a fairly progressive increase.

As this is the fifth Annual Report on vaccination that I have had occasion to prepare, I feel that so far as suggestions are concerned for the improvement of the department, that the subject is nearly exhausted, the more especially as so many of these suggestions have been carried out in practice, and almost the only remaining one I would wish to see as likely to increase the efficiency of the department, is one which at present I know, is impossible. It is that the size of the Circle should be so reduced as to permit of the Superintendent being able to visit every vaccinator under his charge, once at least, during the annual tour of inspection. Until such is the case, there will be always some doubt as to the quality of the lymph in use. The formation of the new or Western Circle is a step in this direction, relieving

Rutnagherry from being a part of the Southern Circle, but even with this reduction it will be almost impossible, considering the number of vaccinators employed by the Jagheerdars, as well as those of the Municipalities, in addition to the Government establishment, that they can be all visited within the seven or eight months which embrace the period of the annual tour of inspection.

On the quality of the lymph in use during the year, I can on the whole report favourably, with the exception of North Canara. During the past year my opportunities of inspecting the lymph have been greater than in any preceding one, as in addition to examining the work of those vaccinators under my charge. I felt it was hardly going beyond my duty if I examined also the lymph in use at the various dispensaries under the charge of Hospital Assistants scattered throughout my Circle; I have therefore visited and inspected the vaccine operations at all the Dispensaries which have laid in my route when moving from station to station: of these I should mention the Hoobiee Dispensary as being distinguished for its excellent quality. From it I have had lymph supplied to several vaccinators in the Dharwar and Canara zillahs. I have also lately examined the lymph at the Kolapoor Civil Hospital under the charge of the Sub-Assistant Surgeon Mr. Wamon Wassoodew, and am glad to be able to report that it has in no way diminished from the high standard it so long maintained under Mr. Mills. The lymph round Belgaum has throughout the year been excellent, I have had frequent opportunities of inspecting it. The vaccinator employed there, Chimmojee Siddojee, the senior member of this establishment, deserves much credit for the manner he has so steadily maintained it. He has thoroughly mastered the difficulties of charging the capillary tubes with liquid lymph, and lymph so preserved has been forwarded by him to Bombay, the Civil Surgeons of Rutnagherry, Sattara, and Karwar, to the Vingorla station, to several Dispensaries, and to many members of the vaccine establishment. From the majority the reports of the lymph so preserved have been satisfactory. It is almost needless to mention the great importance of having a source of lymph always ready and of a quality to be depended on. On all occasions when a successive supply of lymph has been required by medical officers at out-stations the transmission of it has been left in the hands of Chimmojee Siddojee.

During the past year only one instance of active prejudice against vaccination has been brought to my notice, and that was in the Uthnee talooka in the Belgaum zillah. In the month of April or May last I received from Major Thomas, Superintendent of Police, Belgaum, a report of an outbreak of small-pox in that talooka, I immediately directed a vaccinator to proceed there. His Returns for the following three months were singularly small for a district in which small-pox was said to be present, the rule being that under the immediate influence of the fear of small-pox, the most apathetic are then disposed to take advantage of the protection offered them, leading of course to more than ordinary large Returns of operations. In the third month the vaccinator showed only eight operations in his Returns. I could hardly help believing that this very small Return was owing as much to the conduct of the vaccinator, or probably to his having absented himself from duty, as from any prejudice on the part of the people, and I withheld his pay pending an inquiry being made by the Mamlutdar of the district, under the direction of Mr. Naylor, the Assistant Magistrate in charge, to whom I reported the case. The result of this inquiry was thoroughly to exonerate the vaccinator from any blame, and a number of certificates were forwarded to me signed by the Patels of villages to the effect that none of the inhabitants were disposed to submit their children to vaccination; upon this I immediately moved the vaccinator to other districts

where his services would be better appreciated. To do otherwise would have been not only a waste of time but an injustice to other districts where no such prejudice existed. In the event of my receiving again a report of epidemic small-pox in that talooka I shall decline sending a vaccinator, until I have some guarantee from the native officials that his services are likely to be accepted by the people.

Remark has been made in the General Annual Report of Vaccination in the Presidency, of the much larger proportion of children who are shown in the Returns as being above one year of age than under, especially in this and the Central Circle. To a great extent no doubt there is an objection among parents to submit their children at a very early age to vaccination, but admitting that this prejudice might be overcome, there is still a cause left which as long as it remains must necessitate the proportion of the "over one year" being greater than the "under one year of age." It is the small number of vaccinators as compared to the large number of scattered villages under their charge. In many parts of the Circle the number of villages comprised in the district of one vaccinator is so great that it becomes impossible for him to visit the whole within a space of two or three years, consequently when he arrives at a village under these conditions, the children above one year must be in considerable excess of those under one year of age.

In referring to vaccination under Municipalities in my last Annual Report I spoke of it as being in a most unsatisfactory condition. This opinion has been questioned, and it was suggested that my disappointment was due to my having expected too much from so recently established a system. This, if an error on my part, has the redeeming feature of being an error on the right side, it was better to expect too much than to be satisfied with too little, and being so dissatisfied I probably exerted myself more to improve the then existing conditions of affairs then I should otherwise have done. That there was much room for improvement, and that my efforts have not altogether been in vain, the accompanying Form, giving the number of operations monthly, will show :—

Returns of the Vaccinators employed by the Municipalities of the Southern Circle.

Months.	Sattara.						Dharwar.		Belgaum.	Remarks.
	Wetta or Khanapore.	Waee.	Walway.	Mon.	Punder-pore.	Kurrar.	Gudduck and Betti-gherry.	Dharwar.	Gokak 3 months only.	
1865.										
January.....	17	51	132	17	44	59	90	49	49	The Vaccinator at Gokak was employed for only 2 calendar months, but it embraced parts of 3 months.
February	24	47	124	25	40	52	40	45	105	
March	26	40	96	22	39	57	35	35	60	
April	33	40	92	8	40	59	35	40	..	
May	33	43	93	33	40	71	62	35	..	
June	29	43	105	60	38	48	71	30	..	
July	29	44	59	52	34	41	74	..	..	
August	30	36	62	55	40	45	73	..	..	
September....	15	40	79	65	40	41	80	..	..	
October.....	36	41	105	72	44	45	80	..	..	
November....	41	43	159	127	34	45	80	..	..	
December	31	36	78	132	58	47	80	..	..	
Total..	344	504	1,184	668	491	610	800	234	214	
Average Monthly number..	28·6	42	98·6	55·8	41	51	66·6	39	71	

No important change has taken place in this branch during the year under review. The working for a couple of months at Gokak is shown for the first time, and would prove that a vaccinator employed only for a short period does the largest amount of work at the smallest cost. In Sattara no change has taken place. In the Dharwar zillah, where last year there were two vaccinators employed by the Municipalities, only one is now engaged, namely at Guduk with Bettigherry. The Dharwar one has been discharged, nor do I think there is any intention of replacing him. In Canara there are no Municipalities employing vaccinators. Mr. Jervoise, who, for a short time, was acting Collector of the zillah, wished, during an epidemic of small-pox in the Sirey talooka, to employ additional aid there, and endeavoured to induce the people to pay for it, but the attempt failed. They were perfectly ready to avail themselves of the benefits of vaccination if offered to them gratuitously, but do not appear to appreciate the boon sufficiently to make them think it worth paying for.

NORTHERN CIRCLE.

Superintendent.—Assistant Surgeon R. Dick, M. D.
Acting Superintendent.—Assistant Surgeon H. Cook, M. D.
Establishment.—Thirty-three Vaccinators (Government).
Twelve Vaccinators (Native Chiefs).
One Vaccinator (Municipal).

Establishment.	Years.	Total. Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government	1864	67,487	....	....	61,741	91·5
	1865	70,212	2,725	....	66,166	94·2
Native Chiefs	1864	19,564	....	....	17,840	91·2
	1865	20,118	554	....	18,189	90·4
Municipal	1864	....	....	....	....	....
	1865	160	....	....	147	91·8

The above table exhibits an increase of cases of vaccination of 2,725 over the previous year. This is to be attributed to increased activity on the part of the vaccinators, and the assistance they have received from their peons and the village officials. With a few exception the vaccinators have displayed zeal and activity.

With the exception of the Bulsar and Bugwara districts, and some parts of the Mahee Kanta, the inhabitants of this Circle generally avail themselves of the benefit of vaccination. The castes most prejudiced against vaccination, are, as I am informed, the Bhatelas, Machees and Dooblas of the southern districts, a few Parsees of the villages in the neighbourhood of Surat and Bulsar, Mahomedans of Radunpoor, and Bheels, and Thakoors of Mahee Kanta. One of the most unhealthy districts of this Circle, namely Mandvee, is peopled by an ignorant and timid race, whose prinicpal pleasure is drinking, who live in grass huts, and eat the commonest food. The vaccinator of this district is an inhabitant of Mandvee, well acquainted with, and, therefore, better able to overcome the prejudices of the people. It is usually found that a vaccinator placed over his native district, for the above mentioned reason, is more successful, and wins the confidence of the people, more readily than a stranger. It is also desirable that as few transfers as possible be made, as time is lost before the confidence of a new district can be gained.

I have much satisfaction in reporting an increase in the numbers of children vaccinated under the age of one year, also the per-centage of successful cases. That of children under one year old, is 51·9 or 3·6, that of successful cases is 94·2 or 2·7 over the year terminating 31st December 1865.

Vaccine lymph throughout the year has been good, and the vesicles normal. Loss of lymph being reported by three vaccinators during the monsoon, steps were immediately taken to supply fresh lymph, in capillary tubes, from the Civil Hospital.

Small-pox was slightly prevalent in a few villages of Cambay, Wagra, and Duskroe districts, but in no other districts.

SIND DIVISION.

Superintendent.—Assistant Surgeon J. PINKERTON, M.D.

Establishment.—Seventeen Vaccinators (Government).

Eleven Vaccinators (Local).

One Vaccinator (Native Chief).

ESTABLISHMENT.	YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government	1864	46,440	....	....	43,151	92·9
	1865	50,524	4,084	....	47,618	94·2
Local.....	1864	....	....	....	....	....
	1865	11,891	....	....	11,176	93·9
Native Chiefs ..	1864	503	....	....	400	79·5
	1865	816	313	....	681	83·4

At the commencement of the year, I was in Mehur District, where I examined the work of General No. 230 Allah Buksh, in the Kukur Talooka. The operations had been carefully performed, his records were true, his lymph was good and abundant. In the town of Mehur I saw a few children who had been vaccinated by the late Mr. Apothecary Wright. From Mehur I passed into Larkhana District, and in the Talookas of Larkhana and Soojawul examined the work of General No. 247 Shankat Rai, and General No. 27 Luchmon; the former was then a new hand and had just completed his training under the latter; their work in all respects was satisfactory. Thence passed through the Talooka of Nowshera Abro, examining the work of General No. 114 Assoo Mull, who had done a very great number of operations, and whose work I found highly satisfactory. In the town of Yassinji Ghari alone I saw three hundred children whom he had recently vaccinated. I have already mentioned the hearty assistance which the Zemindar of that place gave this vaccinator. From the Shikarpoor and Sukkur Districts I crossed the Indus and went up through Roree District, examining the work of General No. 79 Suroop Sing, which I found highly satisfactory. In the town of Roree I saw a few children with fresh lymph on the arms, the work of Sheikh Wukee, Hospital Assistant, in charge of the Dispensary there; this man has carried on vaccination very successfully during the past three cold seasons. In the town of Gotekee an old inoculator came to me and asked permission to get lymph from Suroop Sing whenever he might want it; he intended operating among the hill tribes on the Jacobabad Frontier, where he had formerly been in the habit of inoculating, I told him that he should have it very willingly, and further that, if he chose, I would appoint him a vaccinator on the local establishment, but this offer he declined, because he could not write, and could make more money working on his own account. From the Roree District I again crossed the Indus and went into Jacobabad District, passing through it from east to west. Along my *route* I made many inquiries regarding the feelings of the people towards vaccination, and if one can believe in their answers, I think there cannot be any very great difficulty in getting them to accept vaccination. In the town of Jacobabad I met Colonel Green and made arrangements with him for commencing operations in the district. I appointed a local vaccinator for the district, and since then he and Luchmon have been employed in that new field. They have not been been able to do very much work, but they have broken ground, and thereby established the fact that the difficulties are not insurmountable. I did not wish at first to use any official influence with the people, but let these two vaccinators work their own way to the good-will of the inhabitants. The Belooches of this district are altogether a more independent race of men than the general inhabitants of other parts of the province, and I thought this method to begin with would work better in the end, but now that they have seen what vaccination is, and are taking to it, I think a Sindhi Circular, setting forth the advantages of vaccination, would be useful, and would also be a guarantee to the people that the Government wishes the children to be vaccinated. I find that some of the people have been asking the vaccinators for the Government order on the subject of vaccination, and as the vaccinators have no such order they are suspicious. A Sindhi Circular would remove this suspicion. I write this from personal knowledge. Turning south I again saw a few children operated on by Assoo Mull in the Talooka of Nowshera Abro; and again some children in the Talooka of Rata Dehra and Soojawul, who had been vaccinated by Shankat Rai and Luchmon. Passing through Larkhana I examined some children in the Talooka of Tiger in the District of Mehur, who had been vaccinated by Allah Buksh. At the end of March and beginning of April I examined the work of General No. 77 Jettah Mull, in the Sehwan District, and found his work well done, his records true and carefully kept. It has taken me some trouble to get

this man brought up to this pitch; had he not been an old vaccinator, I should long ago have recommended his dismissal; but I hope he will continue to do his work well and send in true Returns; any lapse in either must I feel be visited with dismissal from the service, I have warned him, that such shall be his punishment if ever he transgress again. While I write I have received a letter from the Kardar of Maujhandah stating that Jettah Mull is still in the habit of begging murad. I shall make personal inquiries shortly about this. From Sehwan I passed over to the left bank of the Indus and into Nowshera District. It was now the 8th of April, and the heat both night and day was almost unbearable. I have served through hot seasons in Aden and the southern bight of the Persian Gulf, but the heat here last April was greater than in either of these hot places; it was so great that I could only inspect a very few villages near my camp. Thence I marched straight on Hydrabad, the heat sensibly diminishing south of Halla; *en route* I saw a few villages gone over by General No. 148 Lalloo. This man's work I have always found exactly true, and what is of great importance, his method of doing his work gives the villagers great satisfaction, by them he is always hailed as a friend and meets a hearty welcome; in this respect there is marked difference from most of the vaccinators, who are not so happy in their relations with the pepole. In May I passed down into Lar, where the presence of the sea breeze mitigated the heat and made it much more bearable, but still it was terribly great. Towards the end of the month I made a run across the District of Mahomed Khan's Tanda, examining the work of General No. 195 Kowrah Mull, and also a little which had been done by local vaccinator Ram Chand, who had just been trained by Kowrah Mull. I had every reason to be satisfied with both vaccinators. I found Kowrah Mull going steadily over the Talooka of Buddeenah, and doing his work carefully. At the beginning of June I examined the work of General No. 246 Diaram, in the Bage-jo-Tanda Talooka; he had then been nearly a year on the establishment, he was working away steadily, but had frequently complained of meeting with opposition from the villagers. He is a young, active and intelligent man. I fancied he was probably not sufficiently conciliating towards the villagers, I impressed on him the great necessity of his being courteous to them; and that for every frivolous difficulty, he must not expect the Mookhtiyarkar to step in and assist him; that he must depend on his own method of persuasion and conciliation; however, the Mookhtiyarkar, whom I said, had occasionally given him assistance in allaying any spirit of opposition, and promised to continue his assistance when necessary. I had a suspicion that Diaram was not expending sufficient money in payment to parents, for carrying their children from one village to another with him, or that he was misappropriating a part of it; but I am happy to say that in the villages which I inspected I did not discover any dishonesty, still I thought he might have advantageously spent more of the Rupees 2 allowed *per mensem*. I told him to spend it, and not spare it, making it go as far and as equally as possible. When I was in this talooka there were a few cases of cholera. The disease originated among a few *fakirs*, who had come from Kurrachee, where the disease then existed, to a *mera*—a kind of fair held at a shrine—in the village of Shah Towrail. The alarm among the people was sadly out of all proportion to the extent or virulence of the disease, and the reports in the Kurrachee newspapers were greatly exaggerated. I could notice that the distribution of the bottles of cholera mixture by the Deputy Collector had a very happy and inspiriting effect. The Sindhis have great faith in English medicine for cholera, and none in Sindhi medicine. After leaving Bage-jo-Tanda, I marched west and saw a few children, *en route*, recently vaccinated by General No. 142 Chellah Ram, and also some villages which had been gone over by General No. 197 Jehanjee Mull, during the previous year, the work had been well

done. Passing through Meerpoor Buttora, I saw Mr. DeSouza, who is in charge of the Dispensary there; he was not vaccinating on account of the great heat, and there being very few unprotected children remaining in the town. I had a great deal of difficulty in making that march, as the inundation had set in early, and the water was flowing deep and strong in the canals; many of the temporary bridges were either swept away or had not been put up. At the end of the month I crossed over into the Jerruck District, and in July I there examined the records of General No. 185 Damoo Mull, but could not go to see his operations on account of the roads being inundated between Tatta and Ghorebare, he had been at work for some months in the latter place. I passed down the high road to Gharra, where I saw a few children who had shortly before been vaccinated by local vaccinator Choteer Mull; I was anxious to see what this new hand was doing, as he reported great difficulty in getting the inhabitants of Gharra and neighbourhood to submit their children, and in fact could not keep his lymph going; he lost it and was doing nothing. I got down about the middle of July, but it was near the middle of August ere I got lymph re-established there, after that the head vaccinator Hassah Mull, had no difficulty in vaccinating every unprotected child in the town. I had previously spoken to the Patel and Mookhee about vaccination, and they consented to have every child vaccinated, but bargained that none of their vaccinated children should be taken to other villages, to this I agreed, and the trouble was at an end. In the month of September I charged a number of glass capillary tubes with good lymph; after hermetically sealing them, I enclosed seven tubes in a quill, and having sealed up the open end of it with wax, I sent it to a Dispensary; all the Dispensaries were thus supplied in time to commence operations with the opening of the cold season. A good many of the tubes were broken in the post, but from this source vaccination was this year begun in nearly all the Dispensaries. In former years it was a very great trouble to the vaccinators to send children to the Dispensaries, with fresh lymph on their arms, now with tubes there is no difficulty. If tubes were of no other use than merely to supply the Dispensaries, they would still constitute a great boon, but they have occasionally been made use of for carrying lymph long distances, when a vaccinator was moving into a new talooka or returning to his talooka from leave. In the month of October I commenced my cold season tour; between Gharra and Tatta, skirting the hills I examined some work which local vaccinator Choteer Mull had done during the preceding two months, I found it satisfactory, his lymph good and records true. In this talooka towards the mouth of the Bagur I also examined some work of General No. 185 Damoo Mull, and it also was well done. Passing up through Jerruck I saw a few children whom the Hospital Assistant there had vaccinated since receiving the capillary tubes. Thence crossed the Indus and passed up through Hydrabad, and examined the work of General No. 148 Lalloo in the Talooka of Doaba, found it satisfactory in every way. Thence entered Halla District and in the Talooka of Shahdadpoor, examined the work of General No. 165 Gunga Ram. He had done a very great deal of work during the past year, and it was well done; his lymph was good, his records true and neatly kept; but I am very sorry to say that I had to find fault with him for begging *murad* from the parents of children whom he had vaccinated. *Murad* is a kind of auspicious gift, which in former times was given to innoculators; it generally consists of a few pice or a seer of grain, and is supposed to bring good luck to the child. I told this man that on no account would I allow him to ask *murad*, that I could not prevent the people giving it of their own free will, and that he might take a *lakh* if it were offered to him, but that he must either give up begging for it or leave the establishment; he promised to give up asking for it. At the beginning of December I examined some of the villages gone over by General No. 108 Mehar Chand, in the Mora talooka, and was satisfied that his work was

well done, his register correct, and lymph good. Thence passed up through Nowshera Talooka, in which I saw the work of local vaccinator Thackoordass, who has worked uncommonly well considering how short a time he has been a vaccinator. I consider him one of the best hands in the local establishment; his lymph was good, his records very neatly kept and true. From the Nowshera District I passed up through His Highness the Meer of Kyrepoor's territory to Roree. I did not meet the vaccinator of Kyrepoor, and did not feel free to go about the Meer's villages by myself; but I know that during the past year His Highness the Meer's vaccinator has been steadily at work. In the town of Roree I saw some fresh lymph on the arms of several children, and very fine vesicles they were, proving the utility of capillary tubes in conveying lymph long distances, for this lymph was sent in tubes from the other end of Sind. Hospital Assistant Sheikh Wullee is doing good work in Roree, and doing it in good way. Thence passed up to the Talooka of Gotekee, in the town of that name and several adjoining villages, saw the children who had been vaccinated by General No. 79 Suroop Sing; this man's work I have always found well done and highly satisfactory.

To conclude, I have travelled in every District of Sind, except Thurr and Parkur. I have examined every vaccinators' work, except the three in the Thurr and Parkur, and half the number of the vaccinators' work has been twice examined within the year, a thing which has never, I think, been done before. The oftener the vaccinators and their lymph are seen, the better it is on all accounts. I would have gone into the Thurr and Parkur at the end of the year, but on second thought, considered that I could be better spared there than in Upper Sind, for I know that Captain Tyrwhitt keeps an eye on the progress of vaccination in his districts; and here I would beg to bring to the notice of my superiors how earnest and real the supervision is which he practises, as an instance of it, in the Talooka of Saughur, Captain Tyrwhitt, on looking at some work performed by General No. 199 Allah Bux, considered it so well done that he gave that vaccinator a reward in the shape of a "lungi"—a kind of scarf. I need not say how very highly such a distinction coming from an officer in Captain Tyrwhitt's position is valued, and how much effect a reward has in causing the other vaccinators to emulate the work that deserved such an honour. I often wish I had it in my power to confer some such small distinction on vaccinators whom I find doing their work unusually well; an occasional present discriminatingly bestowed would realize its value a thousandfold in creating a spirit of emulation among the vaccinators, who are as a class, miserably paid, and the youngest of whom has nothing much higher to aspire to, or hope for, than what he already has, and that is little enough. But to finish my tour, I have examined the work of fifteen vaccinators of the Government Establishment, three of the Local Establishment, and four medical subordinates in charge of Dispensaries. I travelled 1,666 miles between encampments, and a good deal around them, which does not appear in the monthly employment Reports; and I saw 8,552 vaccinated children in 404 villages.

The total number vaccinated last year in the provinces, including Kyrepoor State, is 63,231, a greater number than has ever been vaccinated in any one year before. I think about this number may be annually vaccinated for a few years more, but doubt if it can be maintained for a series of years, because, I am of opinion that the annual births of the province are probably not much over 65,000, calculating the population at about 2,000,000, but if it be actually as I recently saw stated 3,000,000, then there is no reason to fear but that the present number of vaccinators, by working hard could maintain this number, for the annual births in a population of 3,000,000 must be about 1,00,000, which leaves a large margin above what has been vaccinated.

KATTYWAR CIRCLE.

Superintendent.—Assistant Surgeon E. R. BUTLER, M.D.

Establishment.—Eight Vaccinators, (Government).

Twenty-four Vaccinators, (Native Chiefs.)

ESTABLISHMENT.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government	1864	6,682	....	....	6,173	92·4
	1865	6,940	258	....	6,654	95·8
Native Chiefs ..	1864	20,007	....	....	18,365	91·7
	1865	20,079	72	....	18,469	91·2

The total number of children vaccinated in Kattywar, as per returns received for 1865, is 27,019, an increase of 330 on the total vaccinated during 1864. The principal reason why the returns do not show a greater increase for 1865 is, that during the first eight months of the year cholera was very prevalent—it carried off hundreds of children—almost every village I have visited since the rains have lost two or more children from cholera; it was so bad in the Saiela, Wurdwan, Rajcote, Dedan, and part of the Bhownuggur Talooka, that the assistant vaccinators had to suspend work altogether. Another reason, the vaccinators themselves have suffered much from sickness; two of them were ill for three months consecutively, a third reason is attributable to the disturbed state of part of the peninsula.

The Political Agent and his assistants have given me the greatest assistance, indeed, if it were not for their ever ready and rapid support, I am afraid the Returns would show a much smaller total.

The Native Chiefs have given more assistance than during any previous year. The complaints from assistant vaccinators concerning arrears of pay have not been so numerous, but the complaints that the sepoy (who every State agreed to furnish each assistant vaccinator with when travelling on duty from gaum to gaum) is not forthcoming, or that he has been sent on some other duty, have been nearly as numerous as any other year. The three Talookdars of Babriawar have just agreed to entertain a vaccinator between them, viz., Joonaghur, Jafferabad, and Dedan; Joonaghur employed three vaccinators before, great praise is due to them for so readily acquiescing in this last arrangement.

The per-centage of success again shows an improvement on former years, in a great measure attributable to the very superior lymph obtained from Ahmedabad. Lymph has been transmitted from child to child when practicable, and when sent by myself in tubes. I find that the assistant vaccinators, with one or two exceptions, cannot fill tubes, even after instruction.

I have not found a single false return. None of the vaccinators reported any cases of small-pox last year, but during my tour of inspection I found that several villages had suffered from the disease, at Khaterkotree, in the Dedan Talooka, more than 100 children had died from small-pox during the year, but the Patel assured me that not one of the children who had been vaccinated had died from small-pox. During my inspection in Babriawar I visited two gaums where inoculation had been performed, two children who had been inoculated had suffered slightly from small-pox. The inoculator I could find no traces of, he did not belong to Kattywar, and it was nearly two years since his visit; this is the first time I have met with any cases of inoculation in Kattywar.

I was not able to travel more than three and a half months on inspection duty last year, on account of two months' leave to Bombay for the benefit of my health, and because I was ordered into Rajcote in April, the whole of December I was on duty with the Political Agent and Kattywar Field Force. During my tour of inspection I examined the work of 20 vaccinators.

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon W. FLEMING.
Acting Superintendent.—Assistant Surgeon J. T. WELSH, M.D.
Establishment.—Five Vaccinators (Government).
Five Vaccinators (Native Chiefs).

ESTABLISHMENT.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government (Punch Mahals)	1864	3,195	....	....	2,906	91·0
	1865	3,337	142	....	3,015	90·3
Native Chiefs ..	1864	3,264	....	....	3,069	94·0
	1865	3,994	730	....	3,988	99·8

In the Rewa Kanta Circle during the year 1865, there has been an increase of 872 children over the number vaccinated in the previous year, and there still remains to be added to this the amount of four monthly returns from the Rewa Kanta States, which have not as yet been received. Of the whole increase only 142 belong to the Punch Mahals; this is certainly very small, yet as each year there is some increase, we may fairly expect that as soon as the Bheels understand the object of it, that the work will advance rapidly. At present the vaccinators have a great deal to contend with, as the people, particularly the Naikras, are very much opposed to it, and on one or two occasions have threatened to murder them.

The increased exertions of the Rewa Kanta vaccinators I consider due to the larger pay which the Native Chiefs have at last given them, as they now consider the appointments worth holding, knowing well that their places can easily be filled up should they be dismissed. The districts have been generally reported healthy except during the hot weather when there

were several cases of cholera, paticularly in Ballasindoor, where it almost put a stop to the work for more than a month; a few cases of small-pox were reported on the border of the Dohud district, but the disease did not prevail to any extent. The lymph and vesicles have been well reported on, and any that I have seen were remarkably good.

The Civil Authorities have kindly rendered every assistance, by sending orders to all their subordinates to help the vaccinators in every way.

PRESIDENCY DIVISION.

Local Superintendent.—Sub-Assistant Surgeon ANUNTA CHUNDROBA.

Establishment.—Three Vaccinators.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	7,495	....	....	5,696	75·9
1865	7,829	334	....	5,646	72·1

During the year ending the 31st December 1865, the total number vaccinated amounted to 7,829, being an increase of 334 over the total vaccinated in the year preceding it; of these, 4,382 were males, and 3,447 females; 4,760 Hindoos, 1,207 Mahomedans, 1,110 Christians, 574 Parsees, and 178 of all other castes—chiefly Jews; 3,676 under and 4,153 above one year of age. As to the result of the operations performed, 5,646 or a per-centage of 72·1 were successful, in 862 they failed, and 1,321 the result could not be ascertained.

The per-centage of success has apparently been only 72·1, but it will be seen that this is not owing to any increase in the number of failures, though when often reduced to the necessity of using dry lymph on points and glasses, this cannot but be considerable. Besides, the mass of the people we have to deal with instead of co-operating with and assisting us in the performance of our duties, are rather, from selfish motives, opposed to us, and consequently it becomes an impossible task for the few hands in the department—3 vaccinators and 3 peons—to ferret out the whereabouts of all the subjects operated upon, and as a matter of course, comparatively a large number remain unseen. During my past experience, also, I have found that persons not relishing the visits of the vaccinators during their daily circuit, for the ascertainment of the result of the operations, for fear that they might try to carry away their children to take lymph from, should the operation have proved successful, deceive the establishment by giving false addresses. This is a state of things which, however desirable to be removed, is quite out of the power of the department to remedy. There can, however, be no doubt that in those that are not seen afterwards, the operations must have proved successful to a considerable extent.

Nothing worth special notice occurred during the year. The lymph in use throughout had been of an excellent quality. Now and then, and here and there, however, it showed a tendency to degenerate, but was easily and quickly replaced.

VACCINATION UNDER CIVIL SURGEONS.

TANNA.

One Vaccinator (Municipality's) under the Civil Surgeon,
Assistant Surgeon J. G. ASHER, M. D.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	64	.....	....	51	79·7
1865	109	45	....	100	91·7

The Municipality has employed a vaccinator throughout the year, but further than sanctioning payment of salary, the Commissioners have taken no active interest in the cause. The difficulties in making vaccination general in and about the town of Tanna, which have been commented on in all the reports by myself and predecessors, are as great as ever, the greater numbers being not merely indifferent, but having a positive aversion.

POONA.

One Vaccinator under the Civil Surgeon,
Surgeon Major R. MILLAR, M.D. (*Acting*).

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	1,878	....	....	1,555	81·7
1865	1,537	....	341	1,229	79·9

The diminution in the amount vaccinated would appear to be explained by the fact that two other vaccinators are employed by the Municipality, whose vaccinators do the work which would probably otherwise have been done by the vaccinator who is paid by Government.

AHMEDNUGGUR.

One Vaccinator under the Civil Surgeon,
Surgeon M. M. MACKENZIE (*Acting*).

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	1,413	....	....	1,236	87·4
1865	1,480	67	....	1,183	79·9

I have much pleasure in bringing before you the present Vaccination Report, showing as it does an increase in the actual vaccinations of 67 over that of the previous year. The numbers stand respectively 1,413 to 1,480 for the year 1865. Under the heading, however, of "successfully vaccinated" it will be seen, that only 1,183 proved successful, or in other words, a per-centage of success of 79·9, being about 9 per cent. less successful than that of the preceding year. This falling off in a "successful issue" may be justly put to the fact, that cholera had been more or less prevalent during the months of April, May, June, July and August. At such periods, it is well known how difficult it is to get the parents to consent to the vaccination of their children, and still more difficult, for the vaccinator to keep them in view after the operation is performed. A great many hide about their homes or leave the town altogether. The months that showed the least results were during the months of April, May. June, July, and August, when cholera was more or less prevalent, while in 1864—January, July, and September, gave the smallest return that year. There was *no cholera* in 1864 except in the month of December—5 cases only. The assistant vaccinator has in addition to his more particular duties in connection with the city, carried out operations in the 3rd Dragoon Guards, Battery R. A., and Her Majesty's 14th Regiment, N. I. As to the sexes, 867 were males and 613 females; 769 were under one year, the remainder 711 being above that age. As regards castes, 12 were Christians, 1,338 Hindoos, 128 Mussulmans, and 2 Parsees. I endeavoured to persuade the Municipal Committee of Ahmednuggur to give me a native vaccinator, to be paid by them, as has been done with such good results in other towns, but though by no means adverse to it at a future time, yet at present they report that their funds will not allow them to do so. I trust by and bye to be more successful on this point.

SATTARA.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon H. V. CARTER, M.D.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	2,230	....	....	1,719	77·0
1865	914	....	1,316	786	85·9

In the Annual Report of last year 1864, the chief feature was a considerable falling off in number as compared with the previous year, but not as regards more distant periods; and again a deficiency in number of the persons vaccinated has to be noticed. Last year I stated the circumstances which appeared to account for this falling off, and as they continue to prevail, have now only to repeat that the establishment of several (six in all) "fixed" vaccinators during 1864 in the various talookas around Sattara, has of necessity led to vaccination being practised at a distance from the latter city, where the operation for those districts was formerly carried out to a considerable extent. A second circumstance is noteworthy, viz. that "small-pox" has been singularly rare in the Talooka of Sattara during 1865; so rare, indeed, in the city of Sattara, that I believe no deaths from this cause have occurred during the year. This, of course, is a subject of congratulation for the inhabitants of the locality. Of one thing I am sure, that no efforts to extend vaccination have been spared. I have inspected all the children brought to the station, and have myself generally selected those best suited for furnishing lymph for the next batch; and finding the numbers so reduced, I addressed a letter to the Collector on the subject in October, proposing that every quarter public notice should be given in each division of the city, inviting parents to send their children to the Hospital. Mr. Arthur at once acceded to the proposal, and I think that the larger number vaccinated in the latter months of the year, shows the plan to have had some good effect.

SHOLAPOOR.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon C. F. OGILVIE, M.D.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	1,459	....	....	782	53·6
1865	1,969	510	....	1,532	77·8

During the past year, the number of persons vaccinated has amounted to 1,969, of which 967 were males, and 1,002 were females; 686 were children under one year and 1,283 were above that age; 1,532 were successful, 201 doubtful, and 236 were unsucessful. This work has not been hitherto, since my arrival here in 1862, performed according to my satisfaction, either in regard to the numbers vaccinated, or in the per-centage of success. I have during the past year taken unusual pains with this work, and I am much pleased to be able to report a decided improvement, and that as compared with the previous year, there is an increase of 24·2 in the per-centage of success. There is, however, great room for improvement, and as I have never, I think, on one occasion been unsuccessful in any operation I have myself performed here, I feel convinced, that the present want of success cannot be ascribed to the lymph being of doubtful quality. I must remark, the 201 cases reported doubtful, might have proved successful, had we the same facility for carrying on observations in this country as in England, but as those facilities do not exist, according to my usual custom, all cases, where the pustules are destroyed, or are for other causes considered doubtful, are ordered to be again vaccinated, and it is very possible that in consequence, many of them are returned afterwards as unsuccessful, which would with ordinary care, after the first operation, have proved successful. In this case the per-centage of success would have been 88.

DHOOLIA.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon C. K. Colston.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	764	....	....	692	90·5
1865	819	55	....	763	93·1

Vaccination has been performed twice a week with much the same result as hitherto, the vaccinator meeting with about the same amount of passive opposition, except during 2 months at the commencement of the year, when small-pox was prevalent and committed sad havoc in some of the villages near Dhoolia, at which time many people brought in their children (some from long distances) for vaccination, great attention was given to the selection of cases for the propagation of the virus. Vaccine lymph has been frequently supplied to other stations. The vaccinator Shaik Emam has been most attentive to his duty.

NASSICK.

One Vaccinator under Sub-Assistant Surgeon A. SUMMERS.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	711	....	....	573	80·5
1865	756	45	....	602	79·6

I have to report that vaccination was performed on 756 subjects during the year just expired, exhibiting an increase of forty-five compared with the previous year; of these there were 404 males and 252 female subjects; 602 were successfully operated upon, 30 were unsuccessfully, and 124 were doubtful cases; nearly the whole of the latter were among children whose parents brought them from the neighbouriug villages, and did not bring the children afterwards for inspection. The same reluctance of the parents to bring the children after vaccination was observed this year, owing to the disinclination of the parents to have the lymph extracted for operating upon fresh subjects.

BELGAUM.

One Vaccinator under the Civil Surgeon,
Surgeon Major G. G. W. MAITLAND.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease		
1864	689	....	....	669	98·0
1865	738	49	....	700	94·8

During the past year 738 persons were vaccinated in the town of Belgaum; of these 700 were successful cases and 38 failed. The above table exhibits an increase in the numbers vaccinated compared with the preceding year, but the per-centage of success is less. In addition to the above, the vaccinator has successfully vaccinated 162 children residing in the Camp and Sudder Bazar. So that the total number of operation conducted by the station vaccinator is 900.

A constant supply of good lymph has been kept up during the year, and the vaccinator has never failed to produce healthy subjects to vaccinate from, when called upon to do so by the medical officer of European and Native charges.

DHARWAR.

One Vaccinator under the Civil-Surgeon,
Assistant Surgeon J. CRUICKSHANK, M. D.

YEARS.	Total Vaccinated.	Compared with the preceding year..		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	872	....	....	771	88·4
1865	548	....	324	461	84·1

During the past year 548 persons have been vaccinated, whilst in 1864 there were 872, showing a decrease of 324 as compared with the preceding year. The decrease may to some extent be explained by the fact that small-pox has not been prevalent as an epidemic, and that very few sporadic cases have occurred this year in the zillah, and further that a vaccinator was employed by the Municipality during the first eight months of the year who, I know, vaccinated a number of persons, but on application for his returns I am informed that there is no record of the total number or successful cases vaccinated by him on the Municipality records. Of the number vaccinated 461 were successful, or 84·1 per cent. of the whole, and of the total vaccinated 383 were above, and 165 below, one year of age.

The lymph was for the whole year in good condition, and the vesicles well formed; the conduct of the vaccinator has been satisfactory, and his work carefully performed.

KOLAPOOR.

One Vaccinator under the Sub-Assistant
Surgeon WAMON WASSOODEO.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated	Per-centage of Success.
		Increase.	Decrease.		
1864	1,860	....	....	1,844	99·1
1865	1,701	....	159	1,687	99·1

The number of vaccinations performed by the station vaccinator during the past year amounted to 1,701; of which 890 were males, 811 were females, 2 were Christians, 10 Mussulmans, and 1,689 Hindoos; 469 were children under one year, and the remaning 1,232 were above that age. The successful vaccinations have been 1,687 or 99·1 per cent. on the total number vaccinated.

RUTNAGHERRY.

One Vaccinator under the Civil Surgeon,

Assistant Surgeon H. DAY, M. D.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	987	....	....	740	75·0
1865	431	....	556	339	78·6

There has been very little small-pox about this year in the districts and in the town, consequently the people have not been ready to bring their children to be vaccinated, and indeed the supply of lymph failed once or twice on this account. I have several times called the attention of the Collector to this difficulty, and the Mamlatdar was told to give the station vaccinator every help.

VINGORLA.

Senior Apothecary S. HANSON.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	238	....	....	227	95·3
1865	542	304	....	518	95·5

The total number vaccinated during the year 1865 was 542, being an increase of 304 on that of the previous year; of these 293 were male, and 249 female children; 59 were under one year, and 483 above that age. The successful vaccinations have been 518, or 95·5 per cent. on the total number vaccinated. The lymph and vesicles were good.

HONORE.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon H. WAKEFIELD.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	547	....	....	475	86·8
1865	222	....	325	177	79·7

The number vaccinated during the past year, shows a decrease of 325, to be accounted for partly by the absence of the station vaccinator on leave for 3 months, and also on account of the apathy of the Natives, as, during the past year, there has been but little sickness from small-pox in the villages adjacent, whereas in the year 1864 small-pox was prevalent, and the Natives then sought the aid of the vaccinator of their own free will.

AHMEDABAD.

One Vaccinator under the Civil Surgeon,
Surgeon Major D. WYLLIE, M.D.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase	Decrease.		
1864	3,464	...	....	3,429	99·0
1865	4,271	807	....	4,183	98·0

During the past year the number vaccinated was much greater than it has hitherto been, the above table showing an increase of 807 operations over what was effected in the previous year, and exceeding by 1,585 the figure attained in 1863. This increase is solely due to the circumstance of the vaccinator having had a peon specially detailed to assist him since June 1864, an arrangement that may be regarded as having fully realized expectation, since it has resulted in enlarging the sphere of utility to the extent of more than 100 operations per month beyond the work accomplished before. The lymph employed was that

introduced from Europe at the close of 1863. Its efficacy continued unimpaired throughout, the resulting vesicles being invariably large, well formed, and distinctive. There was an ample supply available at all times to meet the wants of neighbouring stations. Inoculation has long since ceased in this neighbourhood, and as respects the city there is no obstruction to the spread of vaccination, which simply requires to be brought to the doors of the people, and arranged to suit their convenience, although apathy and indifference be still characteristic of ordinary native feeling on this subject, and progress thus be necessarily slow, I am yet conscious that vaccination is steadily advancing in popular appreciation, and looking back for 10 years, to a time when certain sections of the community stood obstinately aloof, or in open antagonism, it is matter for congratulation to be now able to state that there is no class or sect of the population that longer resist the boon, and that the refusals during the year have not exceeded one in a thousand. So far as the establishment goes, it has worked satisfactorily and well, but it is inadequate to do justice to the large field of operation which the city presents. This matter will, however, be remedied for the future, as the Municipality have consented to double the strength of the establishment, which will, from this date, consist of 2 vaccinators and 2 peons, maintained at the cost of the Commission.

KAIRA.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon C. JOHNSON.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	683	....	....	574	84·0
1865	577	....	106	592	85·3

The total number of cases vaccinated during the year is 577; of these 491 were under one year old, 86 above that age; of these 340 were males, and 237 females; 4 were Christians, 515 Hindoos, and 52 Mussulmans, 6 of other castes. Though the villages of Lockra, Hurryalale, Ruttonpoor, Bunsur, and Coowanwarra have been under the care of the assistant vaccinator, Ramchunder Bansay at Kaira, the return shows a decrease in the number vaccinated of 106; this might infer a want of diligence on the part of the vaccinator, but I have reason to believe is not owing to any want of attention on his part, but more to be attributed to most of the children having been vaccinated during the previous two years, and consequently the return consists of young children, for the most part infants. The vesicles have been all through the year of a fair average size, and improved very much on the introduction of new lymph in capillary tubes, by the Superintendent of Vaccination. The assistant vaccinator got matter

from the arm of a child vaccinated with the capillary lymph, and has kept up the same supply till now without its much deteriorating. The inhabitants seem fully aware of the importance of having their children vaccinated, and except in cases where the parents are too careless to do so, they bring their children willingly to be vaccinated without distinction of caste or creed.

SURAT.

One Vaccinator under the Civil Surgeon,
Surgeon W. A. SHEPHERD.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	2,234	....	....	2,057	92·1
1865	1,528	....	706	1,407	92·0

It is but just to the vaccinator to remark, that he uses his best endeavours in the work which has been allotted him. He vaccinates twice weekly at the Civil Hospital and Cursetjee Furdoonjee Dispensary Institution, which are about two miles apart, and he attends, whenever required, at the houses of those who object to bring their children to a public institution; in fact every endeavour is used for the spread of vaccination.

BROACH.

One Vaccinator under the Civil Surgeon,
Surgeon G. GLEN.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	1,221	....	....	1,092	89·4
1865	1,003	....	218	927	92·4

During the past year there has been a falling off in the numbers vaccinated of 218, a large number, which, however, may be accounted for by the very indifferent state of health of the vaccinator during a period of some months. 1,003 children have been vaccinated in all, the number of children under one year amounting to 521. The number of males amount to 552; the number of females to 451. These numbers show a considerable difference between the sexes vaccinated, compared with the year 1864, when the number of males vaccinated in that period nearly doubled that of females. The numbers are chiefly made up of Hindoos and Mussulmans, as has always been the case; but this year also it is noticeable, that a larger number of Parsees have been vaccinated than in any other year since vaccination was established in this town. This is certainly a matter for congratulation as it, in all probability, indicates that their unaccountably strong prejudices against the prophylactic are gradually being removed.

RAJCOTE.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon E. R. Butler, M. D.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	1,117	....	....	959	85·9
1865	496	....	621	439	88·5

The duties of the station vaccinator are now limited to the camp and town, and hence the decrease in numbers vaccinated by him compared with previous years. The per-centage of success is high this year; a large proportion of unsuccessful cases occurred in October, when the vesicles being observed to be generally small and ill-developed, fresh lymph was procured from several sources, but all failed. The vesicles have latterly been much more perfect.

KURRACHEE.

One Vaccinator under the Civil Surgeon,
Surgeon J. Bean.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	1,964	....	....	1,829	93·1
1865	3,114	1,150	....	2,800	8·9

During the past year there were 3,114 persons vaccinated, a fair proportion being children under one year of age; of these operations 2,800 proved successful, a ratio of 89·91 per-cent. Compared with the year 1864 there will be observed to be an increase of 1,150 operations performed by the station vaccinator during the year under report. Notwithstanding this increase, however, the operations have fallen somewhat below the number done in 1863; this is mainly attributable to a smaller migratory population than usual during the year, owing to stagnation of trade generally for a considerable period. At the end of the monsoon the vaccine lymph became deteriorated in quality, and the operation failed entirely or produced a spurious pustule, and fresh lymph had to be procured from the Superintendent of Vaccination in Sind, which has, in every case, produced excellent pustules.

HYDRABAD.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon N. Hopkins.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Pre-centage of Success.
		Increase.	Decrease.		
1864	812	....	....	583	71·8
1865	1,478	666	....	1,205	81·5

The total number vaccinated during the past year was 1,478, being an increase over 1864 of 666; of all the number vaccinated 1,205 were successful, being an increase of those successfully vaccinated over the previous year by 622. Vaccination is performed every Monday and Thursday, and every case is submitted to me for inspection. This year's returns show a great improvement over last year which I can only account for as being owing to the great exertion of the vaccinator who has worked hard, and has been obliged to put up with insults from the Hindoo inhabitants, who will scarcely permit him to approach their houses, although they have large families and many of them not vaccinated; I have brought this to the notice of the Civil authorities who have promised to interfere, but the vaccinator finds nothing but opposition and insults; so I have told him if the people insult him again to go before a Magistrate.

SHIKARPOOR.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon J. F. FFOLLIOTT.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	1,358	....	....	1,252	92·2
1865	1,379	12	....	1,323	95·9

1,379 children have been vaccinated during the past year, 43 only of whom were over one year of age. This return shows a slight increase over that of last year in the number of operations performed, and per-centage of successful results. No case of small-pox occurred in the town of Shikarpoor during the period under review, and the quality of the lymph employed, and character of the resulting vesicles, continue satisfactory.

KOTREE.

One Vaccinator, (Municipality's) under the Civil Surgeon,
Assistant Surgeon R. C. McCONNELL.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	426	....	....	351	82·4
1865	844	418	....	667	79·0

The doubtful cases consist for the most part of those, who, shortly after being vaccinated, change their abode, or perhaps at the time may be travelling, and never again come under the vaccinator's observation.

Lymph and vesicles tolerably good. A few instances of the pustules turning into small ulcers have come under my notice, but, on inquiry, I obtained sufficient information, to lead me to believe the cause was owing more to the unhealthy condition of those in whom ulcers developed themselves, in connection with the past hot and sickly season in Sind, rather than to bad quality of the lymph.

KUTCH.

Surgeon-Major J. C. TRESTRAIL.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	193	....	....	111	57·5
1865	606	413	....	532	87·8

Vaccination has been carried on at the Dispensary during the whole year, and 495 children have been vaccinated, being in excess of the last year of 302. Three vaccinators have been vaccinating in the districts since the end of November, and 111 children have been vaccinated. Great opposition has been shown on the part of the people in allowing their children to be operated on, but His Highness has fined one village, and is using his influence to have vaccination carried out. The lymph I am now using Dr. Welsh brought from England, and is the best I have ever seen. Doubtless this year there will be a great increase in the numbers vaccinated.

ADEN.

One Vaccinator under the Civil Surgeon,
Surgeon-Major J. F. STEINHAEUSER, M.D.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1864	446	....	....	334	74·9
1865	323	....	123	180	55·7

The vaccination at Aden for the year 1865 was commenced by a new assistant vaccinator, with lymph sent from Bombay in capillary tubes, on glasses and on points, the object being to re-establish the protective measure at the station. All operations performed by myself, or by the assistant vaccinator, under my immediate inspection failed, (though fresh supplies of lymph were regularly forwarded by mail steamer every fortnight from the Presidency) until the month of June when success was obtained from virus in tubes transmitted through the India

Office, from the National Vaccine Establishment in London. In July the lymph was lost by the assistant vaccinator, but restored by me in the same month from some of the remaining tubes above mentioned. In August, September, and October, the operations were successful until the end of the latter month when the specific virus was again lost. In November and December all my endeavours to produce a typical vesicle from the tubes received from England in June last, proved abortive.

From this short annual history of the lymph at this station, it follows that successful vaccination has only been carried on during five months of the past year. It is, therefore, not surprising that a decrease in the number of operations performed, has to be recorded, when compared with the preceding year. That the per-centage of success should be so low as 55·72, is accounted for by the numerous futile attempts (no less than 118 having been registered) made to re-establish typical vesicles with lymph which proved inefficient. It is remarkable that virus sent from England, with an average voyage of 16 days, should produce more frequently satisfactory results, than that sent from Bombay with an average voyage of 8 days only. Such, however, is the fact, according to my experience at all seasons of the year.

APPENDIX.

TABLE

VACCINATION UNDER SUPERIN

Table showing the Number and Names of the Circles, and their Superintendents; the those of last Year; the Total Number arranged according to Sex, Caste, the Average Number of Operations performed

Number.	Circles.	Names of the Medical Officers. Superintendents of Vaccination.	Number of Native Vaccinators attached.	Total Number Vaccinated.	Compared with last year.		
					1864	Increase.	Decrease.
1	CENTRAL	Assistant Surgeon P. S. Turnbull, M.D.....	36	63,251	69,299	..	6,048
2	SOUTHERN	,, F. H. Plumptre	29	41,986	34,708	7,278	..
			*8	5,052	....	..	..
3	NORTHERN	,, R. Dick, M.D.....	33	70,212	67,487	2,725	..
		,, H. Cook, M.D., (Acting) ..	*1	160	....	..	..
4	SIND	,, J. Pinkerton, M.D.....	17	50,524	46,440	4,084	..
			†11	11,891	....	..	..
5	KATTIAWAR.....	,, E. R. Butler, M.D.	8	6,940	6,682	258	..
6	REWA KANTA ..	,, W. Fleming	5	3,337	3,195	142	..
		,, J. T. Welsh, M.D. (Acting)..					
7	PRESIDENCY	Sub-Assistant Surgeon Anunta Chundroba....	3	7,829	7,495	334	..
		Total....	151	261,182	235,306	25,876	..

* Municipal
† Local

No. I.

TENDENTS IN BRITISH TERRITORY.

Number of Vaccinators employed; the Total Vaccinations performed and compared with Age, and Result; the Ratio of Successful to Total Vaccinated; and by each Vaccinator, for the Year 1865.

Total Number vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Average Number of persons vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
33,526	29,725	56,540	2,715	48	16	3,932	14,958	48,293	59,350	1,882	2,019	93·8	1,757
22,312	19,674	38,257	2,526	127	..	1,076	6,532	35,454	39,779	1,190	1,017	94·7	1,448
2,767	2,285	4,620	327	..	..	96	1,989	3,063	4,534	308	210	89·6	651
37,5[illegible]	32,652	60,405	5,101	15	83	4,608	36,460	33,752	66,166	1,397	2,649	94·2	2,128
7[illegible]	87	153	7	..	..	..	52	108	147	9	4	91·8	160
27,736	22,788	6,473	39,901	..	..	4,150	12,541	37,983	47,618	381	2,525	94·2	2,972
6,610	5,281	1,305	10,191	..	..	395	3,776	8,115	11,176	306	409	83·4	1,081
3,697	3,243	6,187	731	..	..	22	3,106	3,834	6,654	154	132	95·8	867
1,717	1,620	2,864	438	..	..	35	2,122	1,215	3,015	242	80	90·3	667
4,382	3,447	4,760	1,207	1,110	574	178	3,676,	4,153	5,646	862	1,321	72·1	2,610
140,380	120,802	181,573	63,144	1,300	673	14,492	85,212	1,75,970	244,085	6,731	10,366	93·4	1,729

Vaccination.

do.

TABLE

VACCINATION UNDER SUPERINTENDENTS

Table of Vaccination through the Agency of Native Chiefs arranged according to for the

Number.	Circles and Stations.	Medical Officers.	Number of Native Vaccinators attached.	Total Number Vaccinated.	Compared with last year.		
					1864.	Increase.	Decrease.
1	CENTRAL	Assistant Surgeon P. S. Turnbull, M.D.....	2	1,915	2,550	..	635
2	SOUTHERN	,, F. H. Plumptre	23	17,142	18,816	..	1,674
3	NORTHERN	,, R. Dick, M.D.....	12	20,118	19,564	554	..
4		,, H. Cook, M.D., (Acting)					
5	SIND	,, J. Pinkerton, M.D.....	1	816	....	..	..
6	KATTIAWAR.....	,, E. R. Butler, M.D.	24	20,07	20,007	72	..
7	REWA KANTA..	,, W. Fleming	5	3,994	3,264	730	..
		,, J. T. Welsh, M.D., (Acting)..					
	BHOOJ	Surgeon Major J. C. Trestrail	3	606	193	413	..
		Total..	70	64,670	64,394	276	..

No. II.

AND OTHERS IN NATIVE TERRITORY.

the Circles of Vaccination and Stations, and showing Details as in Table No. I., year 1865.

Total number Vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of successful to Number Vaccinated.	Average Number of persons Vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Above one year.	Under one year.	Successful.	Unsuccessful.	Doubtful.		
1,040	875	1,853	48	..	..	14	292	1,623	1,763	113	39	92·1	957
9,197	7,945	15,882	705	72	..	483	3,957	13,185	15,907	875	360	92·8	745
10,516	9,602	17,187	1,386	..	..	1,545	9,672	10,446	18,189	1,014	915	90·4	1,676
460	356	175	601	..	..	40	290	526	681	96	39	83·4	816
11,202	8,877	17,255	2,708	..	..	116	9,044	11,035	18,469	1,082	528	91·9	837
1,961	2,033	3,671	193	..	6	124	2,197	1,797	3,988	4	2	99·8	799
324	282	285	321	..	..	..	130	476	540	38	28	87·8	202
34,700	29,970	56,308	5,962	72	6	2,322	25,582	39,088	59,537	3,222	1,911	92·0	924

TABLE

VACCINATION UNDER CIVIL

Table of Vaccination under Civil Surgeons and others, arranged according

Number.	Division of Deputy Inspectors-General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached.	Total Number Vaccinated.	Compared with last year.			Sex.	
					1864.	Increase.	Decrease.	Males.	Females.
1	PRESIDENCY	Tanna*	1	109	64	45	..	56	53
		Alibaugh	..	9	213	..	204	6	3
		Bandora	..	86	57	29	..	54	32
		Coorla	..	68	30	38	..	42	26
		Oorun	..	271	276	..	5	195	76
		Total	1	543	640	..	97	353	190
2	POONA	Poona	1	1,537	1,878	..	341	957	580
		Ahmednuggur	1	1,480	1,413	67	..	867	613
		Sattara	1	914	2,230	..	1,316	516	398
		Sholapoor	1	1,969	1,459	510	..	967	1,002
		Dhoolia	1	819	764	55	..	455	364
		Nassick	1	756	711	45	..	404	352
		Total	6	7,475	8,455	..	980	4,166	3,309
3	NORTHERN	Ahmedabad	1	4,271	3,464	807	..	2,375	1,896
		Kaira	1	577	683	..	106	340	237
		Surat	1	1,528	2,234	..	706	896	632
		Broach	1	1,003	1,221	..	218	552	451
		Rajkote	1	496	1,117	..	621	262	234
		Total	5	7,875	8,719	..	844	4.425	3,450
4	SOUTHERN	Belgaum	1	738	689	49	..	412	326
		Dharwar	1	548	872	..	324	275	273
		Hooblee*	1	1,115	1,353	..	238	595	520
		Kolapoor	1	1,701	1,860	..	159	890	811
		Rutnagherry	1	431	987	..	556	251	180
		Vingorla	..	542	238	304	..	293	249
		Honore	1	222	547	..	325	117	105
		Dispensary (Belgaum)*	1	339	..	..	..	217	122
		Total	7	5,636	6,546	..	910	3,050	2,586
5	SIND	Kurrachee	1	3,114	1,964	1,150	..	2,071	1,043
		Hydrabad	1	1,478	812	666	..	836	642
		Shikarpoor	1	1,379	1,358	21	..	719	660
		Kotree*	1	844	426	418	..	563	281
		Dispensaries	..	3,471	3,828	..	357	1,953	1,518
		Total	4	10,286	8,388	1,898	..	6,142	4,144
6	ADEN	Aden	1	323	446	..	123	204	119
7	PERSIAN GULF	Bushire	..	188	..	..	..	90	98
		Total	1	511	446	65	..	294	217
		Grand Total	24	32,326	33,194	..	868	18,430	13,896

* Municipal

No. III.

Surgeons and others.

to Divisions, and showing the Details as in Table No. 1, for the year 1865.

Total Number Vaccinated, arranged according to											
Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Number of Persons Vaccinated by each Vaccinator.
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under One Year.	Above One Year.	Successful.	Unsuccessful.	Doubtful.		
75	11	13	5	5	25	84	100	6	3	91·7	109
4	..	..	..	5	2	7	6	2	1	66·6	....
50	9	22	3	2	14	72	3	38	45	3·5	....
22	12	33	1	..	29	39	42	12	14	61·8	....
192	66	9	..	4	43	228	226	20	25	83·4	....
343	98	77	9	16	113	430	377	78	88	69·4	109
1,261	236	32	8	..	480	1,057	1,229	131	177	79·9	1,537
1,338	128	12	2	..	769	711	1,183	186	111	79·9	1,480
827	68	17	..	2	545	369	786	39	89	85·9	914
910	691	1	..	367	686	1,283	1,532	236	201	77·8	1,969
587	100	7	..	125	619	200	763	13	43	93·1	819
593	62	11	..	90	504	252	602	30	124	79·6	756
5,516	1,285	80	10	584	3,603	3,872	6,095	635	745	81·5	1,246
3,636	605	11	19	..	2,792	1,479	4,183	31	57	98·0	4,271
515	52	4	..	6	491	86	492	11	74	85·3	577
1,223	220	11	31	43	707	821	1,407	42	79	92·0	1,528
672	243	1	79	8	521	482	927	14	62	92·4	1,003
323	160	2	4	7	243	253	439	48	9	88·5	496
6,369	1,280	29	133	64	4,754	3,121	7,448	146	281	94·6	1,575
589	138	7	4	..	433	305	700	29	9	94·8	738
361	176	11	..	..	165	383	461	68	19	84·1	548
909	196	..	..	10	232	863	984	85	46	88·2	1,115
1,689	10	2	..	..	469	1,232	1,687	7	7	99·1	1,701
424	4	3	..	..	101	330	339	43	49	78·6	431
519	18	5	..	..	50	483	518	9	15	95·5	....
157	5	60	..	..	25	197	177	16	29	79·7	222
276	54	9	..	..	149	190	324	8	7	95·9	339
4,924	601	97	4	10	1,635	4,003	5,190	265	181	92·8	728
536	2,440	78	14	46	1,129	1,985	2,800	151	163	89·9	3,114
755	635	36	..	52	998	480	1,205	139	134	81·5	1,478
876	501	1	1	..	1,336	43	1,323	35	21	95·9	1,379
65	761	14	..	4	261	583	667	76	101	79·0	844
1,746	1,524	5	..	196	1,275	2,196	3,081	190	200	88·8	....
3,978	5,861	134	15	298	4,999	5,287	9,076	591	619	88·2	1,704
53	47	5	..	218	60	263	180	140	3	55·7	323
..	172	..	..	16	123	65	188	..	..	100·0	....
53	219	5	..	234	183	328	368	140	3	72·0	323
21,183	9,344	422	171	1,206	15,285	17,041	28,554	1,855	1,917	88·3	1,154

TABLE

General Abstract of Vaccination

Designation of Tables.	Total Number Vaccinated.	Compared with last year.			Sex.	
		1864.	Increase.	Decrease.	Males.	Females.
No. 1, Vaccination under Superintendents in British Territory	261,182	235,306	25,876	....	140,380	120,802
No 2, Ditto ditto and others in Native Territory.	64,670	64,394	276	....	34,700	29,970
No 3, Ditto under Civil Surgeons, &c.	32,326	33,194	....	868	18,430	13,896
Total....	358,178	332,894	25,284	....	193,510	164,668

No. IV.

FOR THE YEAR 1865.

Total Number Vaccinated, arranged according to										Ratio per cent. of successful to number vaccinated.
Caste.					Age.		Result.			
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes	Under One year.	Above One year.	Successful.	Unsuccessful.	Doubtful.	
181,573	63,144	1,300	673	14,492	85,212	175,970	244,085	6,731	10,366	93·4
56,308	5,962	72	6	2,322	25,582	08 8	59,537	3,222	1,911	92·0
21,183	9,344	422	171	1,206	15,285	17,041	28,554	1,855	1,917	88·3
2,59,064	78,450	1,794	850	18,020	126,079	232,099	332,176	11,808	14,194	92·7

TABLE No. V.

TABLE OF AGES.

Vaccination in 1865, arranged according to Ages, whether performed under or above One Year of Age.

ESTABLISHMENTS, &c.	AGE.		DIFFERENCE.		Total Vaccinated.
	Under One Year.	Above One Year.	Under.	Above.	
I.—Superintendents in British Territory	85,212	1,75,970	....	90,758	2,61,182
II.— Ditto and others in Native do.	25,582	39,088	....	13,506	64,670
III.—Civil Surgeons and others	15,285	17,041	....	1,756	32,326
Total.	1,26,079	2,32,099	....	1,06,020	3,58,178
I.—*Superintendents in British Territory*					
Central Circle	14,958	48,293	....	33,335	63,251
Southern do.	8,521	38,517	....	29,996	47,038
Northern do.	36,512	33,860	2,652	....	70 372
Sind do.	16,317	46,098	....	29,781	62,415
Kattiawar do.	3,106	3,834	....	728	6,940
Rewa Kanta do.	2,122	1,215	907	....	3,337
Presidency do.	3,676	4,153	....	477	7,829
II.—*Superintendents and others in Native Territory.*					
Central Circle	292	1,623	....	1,331	1,915
Southern do.	3,957	13,185	....	9,228	17,142
Northern do.	9,672	10,446	....	774	20,118
Sind do.	290	526	....	236	816
Kattiawar do.	9,044	11,035	....	1,991	20,079
Rewa Kanta do.	2,197	1,797	400	....	3,994
Bhooj	130	476	....	346	606
III.—*Civil Surgeons and others.*					
Tanna	25	84	....	59	109
Alibaugh	2	7	....	5	9
Bandora	14	72	....	58	86
Coorla	29	39	....	10	68
Oorun	43	228	....	185	271
Poona	480	1,057	....	577	1,537
Ahmednuggur	769	711	58	....	1,480
Sattara	545	369	176	....	914
Sholapoor	686	1,283	....	597	1,969
Dhoolia	619	200	419	....	819
Nassick	504	252	252	....	756
Ahmedabad	2,792	1,479	1,313	....	4,271
Kaira	491	86	405	....	577
Surat	707	821	....	114	1,528
Broach	521	482	39	....	1,003
Rajcote	243	253	....	10	496
Belgaum	433	305	128	....	738
Dharwar	165	383	....	218	548
Hooblee	232	883	....	651	1,115
Kolapoor	469	1,232	....	763	1,701
Rutnagherry	101	330	....	229	431
Vingorla	59	483	....	424	542
Honore	25	197	....	172	222
Dispensary (Belgaum)	149	190	....	41	339
Kurrachee	1,129	1,985	....	856	3,114
Hydrabad	998	480	518	....	1,478
Shikarpoor	1,336	43	1,293	....	1,379
Kotree	261	583	....	322	844
Dispensaries	1,275	2,196	....	921	3,471
Aden	60	263	....	203	323
Bushire	123	65	58	....	188

TABLE No. VI.

EMPLOYMENT RETURN OF SUPERINTENDENTS OF VACCINATION FOR THE YEAR 1865.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	11	169	16	3,312	42 Villages visited and inspected.
February	13	138	15	6,436	38 do. do.
March	11	154	18	9,687	82 do. do.
April.....	9	123	14	2,131	37 do. do.
May	8	124	22	6,855	105 do. do.
June	8	105	10	259	6 do. do.
July	3	337	5	10	1 do. do.
August.....	1	28	..	45	4 do. do.
September ..	5	86	6	82	3 do. do.
October	1	43	6	159	5 do. do.
November ..	7	310	13	564	20 do. do.
December ..	10	160	20	2,047	48 do. do.
Total..	87	1,837	145	31,587	

NORTHERN CIRCLE.

Superintendents.— { Assistant Surgeon R. DICK, M D.
" " H. COOK, M.D., (*Acting.*)

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	18	143	11	600	10 Villages visited and inspected.
February	13	64	5	340	10 do. do.
March	10	145	9	243	8 do. do.
April	10	86	9	105	9 do. do.
May	8	130	8	138	8 do. Was 10 days absent in Bombay to pass examination in Goozeratee.
June.....	3	41	3	100	2 do.
July	....	....	....	....	The Civil Surgeon Surat officiated as Superintendent, consequent upon departure of Dr. Dick on sick leave to England.
August.....	....	....	....	....	
September ..	....	....	....	....	
October.....	....	....	....	....	
November ..	....	....	....	....	
December....	3	64½	3	39	Dr. Cook joined.
Total..	65	673½	48	1,565	

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon F. H. PLUMPTRE.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	8	95	8	160	13 Villages visited and inspected.
February	9	110	10	157	17 do. do.
March	14	143	16	181	23 do. do.
April	16	235	20	153	22 do. do.
May	5	84	7	74	6 do. do.
June.....	....	....	....	....	
July	....	....	....	....	
August.....	....	....	....	....	
September ..	....	....	....	....	
October	9	110	12	264	14 Villages visited and inspected.
November ..	7	73	7	250	12 do. do.
December ..	9	148	11	235	15 do. do.
Total..	77	998	91	1,474	

SIND CIRCLE.

Superintendent.—Assistant Surgeon J. PINKERTON, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	168	173	16	2,508	99 Villages visited and inspected.
February	15	168	16	716	37 do. do.
March	15	148	15	1,558	55 do. do.
April.....	10	119	10	348	11 do. do.
May	15	356	17	585	36 do. do.
June.....	10	93	..	417	23 do. do.
July	4	98	4	23	
August.....	....	....	....	51	
September ..	3	97	3	50	
October.....	6	119	8	229	21 Villages visited and inspected.
November ..	14	165	15	1,018	57 do. do.
December....	11	150	....	1,249	50 do. do.
Total..	119	1,686	104	8,552	

KATTIAWAR CIRCLE.

Superintendent.—Assistant Surgeon E. R. BUTLER, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January....	10	180	15	463	15 Villages visited and inspected
February....	..	....	..	..	
March.....	8	136	11	783	11 do. do. } Absent in Bombay on leave from 21st Jan. to 20th March.
April	14	196	16	319	13 do. do.
May.....	....	....	....	....	
June.....	....	....	....	....	
July.....	....	....	....	....	
August.....	....	....	....	....	
September ..	....	....	....	....	
October	11	215	21	524	23 Villages visited and inspected.
November ..	14	258	24	204	32 do. do.
December ..	9	259	15	4	4 do. was for about 24 days with the Political Agent and the Kattiawar Field Force.
Total..	66	1,244	102	3,419	

REWA KANTA CIRCLE.

Superintendents.— { Assistant Surgeon W. FLEMING.
" " J. T. WELSH, M.D., (*Acting.*)

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	4	204	11	369	46 Villages visited and inspected.
February	7	136½	7	174	7 do. do.
March	6	207½	11	387	20 do. do.
April	....	....	....	....	Dr. Fleming proceeded to Europe on sick certificate in July 1865, and Dr. Alleyne officiated till January 1866, when Dr. Welsh joined at Dohud with the Guzerat Bheel Corps.
May.....	....	....	....	....	
June	....	....	....	....	
July	....	....	....	....	
August	....	....	....	....	
September ..	....	....	....	....	
October	....	....	....	....	
November ..	....	....	....	....	
December....	2	24	12	622	21 Villages visited and inspected.
Total..	19	572	41	1,552	

No. 804.

GENERAL DEPARTMENT.

Bombay Castle, 21*st April* 1866.

RESOLUTION.—The number of vaccinations increased in the year under report from 3,32,894 to 3,58,198, about 8 per cent. of which proved either unsuccessful or doubtful. The relative proportion of male and female subjects tallies with that of previous years. Nearly two-thirds of the patients were Hindoos. Thirty-five per cent. of the operations were performed on infants below one year of age, being a slight increase over the number during the preceding season.

2. The testimony of the Superintendents to the greater accuracy of the returns, after careful verification, is very satisfactory.

3. As regards infantile vaccination, His Excellency in Council is glad to learn that the percentage rose from 11 to 23 in the Deccan, where hitherto prejudice has retarded progress. In Guzerat the average rate was 54 per cent., being higher than any where in the Presidency, except at Shikarpoor, where it rose to the highest rate ever recorded in this Presidency, viz. 96 per cent.

These facts are very encouraging, and His Excellency in Council cordially endorses Dr. Stovell's opinion of the exertions of the Officers who have brought about the results so conspicuous under the management of Dr. Ffolliott and his predecessors at Shikarpoor.

4. Throughout the Presidency, except at Aden, and in a lesser degree at Vingorla, there seems to have been a marked diminution in the number of cases of small-pox. Dr. Stovell should report, whether it would not be practicable to obtain for Aden more frequent supplies of fresh lymph direct from Europe.

5. On the subject of inoculation, His Excellency in Council is glad to learn that in no part of the Presidency, except amongst a single caste in Guzerat and in two Kattiawar villages, was a single case brought to light. Under these circumstances it will not be necessary to have recourse to legislation.

6. The large extension of Municipal Vaccination noticed in Dr. Stovell's 29th and 30th paragraphs, is highly satisfactory.

7. The Secretary of State should, for the reasons given by Dr. Stovell, be requested to forward the next supply of lymph solely in tubes.

8. The modification of the system in force at the Presidency, and the reorganization of the Department, described in Dr. Stovell's concluding paragraphs, will doubtless conduce to a still larger measure of success.

9. The assistance rendered by Civil and Political Officers, the services of Superintendents, especially of Drs. Plumptre and Pinkerton, and the conduct of Vaccinators, merit the commendation and acknowledgments of Government.

F. C. CHAPMAN,
Chief Secretary to Government.

BOMBAY: PRINTED AT THE EDUCATION SOCIETY'S PRESS, BYCULLA.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1866.

Bombay:
PRINTED FOR GOVERNMENT
AT THE EDUCATION SOCIETY'S PRESS, BYCULLA.

1867.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1866.

No. 1038 of 1867.

From the Inspector General, Medical Department,

To the Chief Secretary to Government, General Department.

Sir,—I have the honour to forward the annual Report on Vaccination in the Presidency of Bombay for the year 1866, for submission to the Right Honorable the Governor in Council.

2. The report consists of a statement of the general working of the department during the year, of extracts from the reports of Superintendents of Vaccination, Civil Surgeons and others, showing more minutely the progress of the various establishments, and lastly, of tabulated figured results.

3. The Circles of vaccination remain the same as they were in the preceding year, but the number of vaccinators was larger by 18; an increase due, in a great measure, to Native Chiefs and Municipalities, whose active aid in so good a cause deserves the greatest praise.

4. There were one hundred and fifty-three working vaccinators employed under the Government, and one hundred and ten kept up by Native Chiefs, Municipalities and Local Funds.

5. Several changes took place during the year among the Superintendents. In the Northern Circle, Assistant-Surgeon Cook (who was acting for Dr. Dick, on Medical Certificate in England) was, in the month of November, appointed Acting Civil Surgeon, Kaira, and was succeeded by Dr. Muncherjee B. Colah, a

Parsee medical gentleman not in the service. In the Central Circle, Assistant Surgeon Turnbull was acting Civil Surgeon at Ahmednuggur from the 2nd of April to the 29th of December, during which time no active superintendence of work was carried on. In the Southern Circle Assistant Surgeon Plumptre proceeded to Europe on furlough in March, the appointment was at once filled up by Surgeon H. Day. The Western Circle was, throughout the year, without the presence of its Superintendent, Assistant Surgeon Blanc, still absent on special duty in Abyssinia; the southern portion of this Circle is somewhat important in a vaccination point of view, for it affords a large number of the recruits for the Native Army and for the Bombay Police force, it also sends annually a large proportion of the labouring classes to the various works in and around Bombay. It extends from Bancote to the Sawunt Warree State in the south, and was under the charge of the Superintendent Southern Circle. The northern part extends from Rewadunda to the Portuguese Settlement of Damaun in the north, and was under the charge of the Superintendent of the Central Circle. The want of superintendence has been felt in this division. In the Kattiawar Circle, Dr. Butler was obliged to proceed home on Medical Certificate in August. Several officers successively held charge of the office, pending the arrival of Assistant Surgeon Bloomfield, who was appointed to act. No active superintendence was performed during the period.

6. At the termination of the year the Superintendents were—

Northern Circle—	Assistant Surgeon Dick, M.D., (Europe M. C.) Dr. M. B. Colah (Acting.)
Central „	Assistant Surgeon Turnbull, M.D.
Southern „	Surgeon Day, M.D.
Sind „	Assistant Surgeon Pinkerton, M.D.
Kattiawar „	Surgeon Butler, M.D. (Europe M. C.) Assistant Surgeon Bloomfield, (Acting.)
Rewa Kanta „	Assistant Surgeon Fleming, (Europe M. C.) Assistant Surgeon Welsh, (Acting.)
Western „	Assistant Surgeon Blanc, M.D. on special duty, Abyssinia. Drs. Day and Turnbull in charge.
Presidency „	Sub-Assistant Surgeon Anunta Chundroba, G.G.M.C.

7. Excluding the vaccinations performed in Military Cantonments, which will form the subject of another report, the number of children operated on throughout the Presidency and Sind, amounted to 379,497, showing an increase over the previous year of 21,319. This must be considered highly satisfactory, as the

general result, for though there were eighteen additional hands at work, their vaccinations did not number so much as half the above increment. For the five years antecedent to 1866 the amount of operations was as follows:—

1861 ..	259,668	1864 ..	332,894
1862 ..	244,792	1865 ..	358,178
1863 ..	267,995		

8. Analysis of the year's work shows that nearly all the Government Circle vaccination returns exhibited a decrease on the preceding year. The total falling off in them was 10,648, distributed as follows:—

Northern Circle	1,127
Southern „	1,038
Central and Western	1,708
Sind	6,393
Kattiawar	377

As a slight set off to this there were increases in the Presidency and the Rewa Kanta, in the former 1,037, in the latter 2,496.

9. Under Native Chiefs a considerable general increase took place amounting to 10,073. The vaccinators, under the Chiefs in Kattiawar, Northern, Southern and Rewa Kanta Circles were particularly active in their work.

Under Municipalities an increase is shown of 6,461. Those most noticed for their successful work were Ahmedabad, Poona, Hooblee, and Koragaum.

Under Civil Surgeons and others there was also a general increase of work performed. Kurrachee, Ahmedabad, Sholapore, Hydrabad, Surat, Poona, Rajkote, and Sattara, were most prominent.

10. The establishment of vaccinators kept up by the local funds in Sind numbers now thirteen, it has become quite an institution and one which has worked most admirably during the year. By its means the vaccination of the province was greatly extended, and the number of operations exceeded very considerably that of the year 1865. The total increase was 11,703.

11. The decrease alluded to in vaccination results in the Circles is fully accounted for, chiefly by the general absence of small-pox in the country, its presence being a never failing stimulus to the apathetic people to employ the vaccinator, by the great difficulties experienced in endeavouring to carry the work into new fields, as shown by Dr. Turnbull, and by much sickness among the vaccinators, especially in Sind, as more particularly noticed by Dr. Pinkerton.

To these causes may be added that of a decrease of superintendence necessitated by the requirements of the service.

12. The operations performed during the year, as shown in the returns, give a mean percentage of success of 92·7, the maximum being 99·3 at Kolapoor, and the minimum 56·1 at Bandora, under the Sub-Assistant Surgeon there. Out of the total vaccinations, 351,935 were entered as successful. The Superintendents pronounce favourably on the accuracy of the returns as verified by them in their tours. A few exceptions only to their truthfulness were ascertained, and these were followed by dismissal of the vaccinators concerned. Under watchful superintendence, regular checking of the vaccinators' registers, the timely assistance rendered to them by the native district authorities in the general progress of their work, and the knowledge that dismissal follows detection, the practice of falsification of returns has much decreased.

13. The proportion of males to females vaccinated is much the same as it was in former years. There were 205,156 males and 174,341 females.

14. The vaccinations of the year, arranged according to caste, are as follows:—

Christians	3,508
Hindoos	267,866
Mussulmans	86,372
Other castes	20,817
Parsees	934

Notwithstanding the numbers of the Parsees in Bombay and in the various districts in the Presidency and their general intelligence, the annual increase is not commensurate with their progress. This has been noticed in previous reports; it is however possible that many Parsee children are vaccinated by private practitioners, of whose work in this respect little or nothing is known.

15. The subject of the age at which children are vaccinated is one that cannot be too much attended to, and the reports show that Superintendents are bringing it to the notice of the vaccinators. It is not unlikely that some difficulties exist in arriving at any great accuracy, and also that the men have not considered the matter of much importance; the present returns can therefore only be considered, as previous ones have been on this point, approximately correct. According to the returns there were 141,695 operated on below one year of age, and 237,802 above, giving a percentage of 37·3 vaccinated in early infancy, a small increase on the preceding year.

16. The proportions however vary very much, for while in the Deccan, Southern Maratha Country, and Sind, it is respectively 25, 22, 22, it is shown to be

in the Northern Division and the Rewa Kanta 60·8 in the former and 62·3 per-cent. in the latter. This bears out the remark of Dr. Dick who, in the year 1863, stated "that the unwillingness to submit young infants to vaccination, which is observed elsewhere, is rarely met with in Guzerat."

17. The immense utility of successful vaccination in infancy, cannot be too much impressed on the minds of the people. One Superintendent (Northern Division, Guzerat) has remarked, "one is struck at once with the general freedom, from the marks of small-pox and other deformities, produced by this disease, among the young population, while among the old inhabitants are seen the scarred, blind and the otherwise horribly deformed by this loathsome scourge." In the city of Shikarpore under Mr. Ffolliott, Civil Surgeon, who has paid particular attention to the perfect vaccination of the place, there were vaccinated 98 per cent. under one year. It is greatly to be regretted that in Bombay itself vaccination under one year is not more extensively carried on, 40·5 per cent. only being vaccinated below one year of age.

Character of lymph.

18. The lymph, or vaccine virus, has been ascertained by the Superintendents and officers in charge to have been generally of good quality. A few exceptions were, however reported. Dr. Cook, in the Northern Circle, observed in two or three cases that the vesicles were not so good as he could have desired. In the Southern Circle Dr. Day found some vaccinators working with doubtful lymph, and the same in the Western Circle. In only one instance in Sind did Dr. Pinkerton ascertain deterioration. In all these cases the lymph was replaced.

Supply of lymph.

19. In paragraphs 33 and 34 of the report forwarded by the Principal Inspector General for the year 1865, it was pointed out that much difficulty existed in Bombay in keeping up the supply of fresh lymph. In Bombay arm to arm vaccination becomes every day more and more difficult, as will be observed in the extract from the Superintendent's report, indeed the unwillingness of the people to permit of direct vaccination is the worst enemy the prophylactic possesses and frequently causes the stoppage of the work.

20. To obviate somewhat this difficulty, and at the same time to give fresh vaccine matter to the country, the Government addressed the Secretary of State for India on the subject and, in communication with the National Vaccine Institution, lymph was forwarded in December 1865 and 1866. The greater part of the last supply, somewhat small for the purpose, was on ivory points, a mode

of transmission in which no confidence can be placed. It was immediately distributed to the Officers of the various Circles, as follows:—

	Tube, result.	Ivory Point, result.
Presidency	successful	successful.
Western	....	inert.
Central	inert	inert.
Northern	inert	inert.
Southern	successful	successful.
Sind	inert	inert.
Rewa Kanta	inert	inert.

21. The periodical supply of fresh lymph is much to be desired. I would therefore again beg to suggest that the annual supply may be sent only in tubes, and that it may if possible be increased.

22. The lymph sent to Aden, of 1866, where it was greatly needed, from the failure of the supply of 1865 and the failure of all the supplies sent from Bombay, was very successful, and up to date had lost none of its characteristic properties.

Small-pox.

23. The occurrence of small-pox, judging from the returns of the Superintendents, was not observed to any great extent during the year. It was reported to have attacked some of the villages in Kattiawar. It broke out in a Thakore's village in the Northern Division; in his fear he sent for a vaccinator, had the children all operated on, and stayed the progress of the disease, the man's services "were so highly appreciated that he was dismissed with a handsome present." In Sind small-pox was reported on occasionally during the year, in two instances or more it was ascertained to have been a false alarm. Dr. Pinkerton gives an interesting account of an outbreak of the disease in a village where many of the Hindoo inhabitants had a few months before refused to permit their children to be vaccinated, the greater part of these were attacked and a sad mortality ensued. In the Rewa Kanta scattered cases occurred.

24. In Bombay the deaths from small-pox in 1866 were 1,079, nearly double the number of the previous year. The deaths from this disease fluctuate much, the average for ten years inclusive of 1866 gives 880. There were three additional vaccinators employed during the year, but the means for giving full scope to the utility of the establishment have yet to be considered. At Aden small-pox is generally present, and is for the most part an imported disease. In London, with

a population of about 3 millions, the death rate from small-pox was in 1864, 0·18 per mille. In Bombay in the same year it was 2·05.

25. The practice of inoculation of small-pox has not been very prominent or much noticed during the year. Sind appears to be the only Circle where an overt act of inoculation occurred. It was a single case, fully proved. The operator was taken before a Magistrate, and punishment awarded, but as the law cannot take cognizance in this country of this as an offence, the Magistrate's decision was overruled by the Sudder Court of Sind. The wise measures however adopted by the Commissioner rendered the apparent victory of no avail to the inoculator and his class. Dr. Pinkerton narrates a little incident of vaccination and inoculation which is interesting. The child of one of the Ameers in Sind had been vaccinated, doubts and fears however lingered in the breasts of the family, and the inoculator was at last called in; there was considerable anxiety displayed as to the issue of this crucial experiment. The vaccination however stood the test to the satisfaction of the Ameer, who bestowed a gift on the vaccinator.

26. The necessity for suppressing inoculation must always be kept in view, and in the absence of legal measures it can only be accomplished by vaccination being always at hand. It slumbers so long as the young population are guarded by vaccination. Any laxity of superintendence however, or want of general energy in the Department, would assuredly cause its re-appearance more perhaps to provide for a want than for any love to an operation which is sometimes followed by such sad results as great mortality and spread of the disease.

27. The aid afforded to the Superintendents by the Civil and Political authorities, and by the Native officials to the working men in their progress is fully and warmly acknowledged, there is no doubt that without the assistance thus given, the vaccinators' returns would be infinitely smaller. Another kind of aid is that rendered by the Chiefs of Native States being brought to view the prophylactic in its proper light, and as a consequence setting up small establishments to the great good of their people. Some Native States are however backward, and that of "the Hubshee," in close vicinity to Bombay, is one of these. Municipalities too aid in the march of vaccination, and will, it is to be hoped, add to their utility year by year. There have been seven added during the year under record.

It gives me much pleasure to express my acknowledgments to the Superintendents during the year, their intelligent and earnest work has been highly satisfactory.

The establishments, and many vaccinators individually, have been favourably noticed by their Superintendents, and it appears to me that the liberality of Government, already extended to these hard working men, has been productive of good.

I have the honour to be,

Sir,

Your most obedient Servant,

F. S. ARNOTT, M.D., C.B.,

Inspector General, Medical Department.

Bombay, 31*st March* 1867.

VACCINATION UNDER SUPERINTENDENTS.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D.

Establishment.—Thirty Six Vaccinators (Government).

Two Vaccinators (Native Chiefs).

One Vaccinator (Municipality).

ESTABLISHMENT.	YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease		
Government ..	1865	63,251	....	....	59,350	93·8
	1866	61,543	....	1,708	57,847	94·0
Native Chiefs ..	1865	1,915	....	....	1,763	92·1
	1866	953	....	962	786	82·5
Municipality ..	1865	....	....	....	....	....
	1866	213	213	....	190	89·2

The number of operations performed during the past, though less than that of the preceding year, nevertheless shows, I think, that the members of the establishment generally have worked zealously and well.

Causes of decrease. The causes of the above decrease are—

1. The all but total absence of small-pox throughout the Circle, and consequently, in the eyes of the people, of any necessity for having the operation performed.

2. To attempt at introducing vaccination into districts (especially in the collectorate of Kulladghee) hitherto very little or never visited by a vaccinator.

3. That the first of these causes existed will be apparent as soon as the Annual Return of small-pox is submitted.

During my tour in Khandeish and Ahmednuggur, in the beginning of the year, I neither heard of nor saw a single case, and the Monthly Returns of the vaccinators show that very few cases came under their observation.

4. Any one who has any practical acquaintance with vaccination, as carried on in this country, is aware of the immense effect which an epidemic of small-pox has upon its people and how they then seek the protection of the prophylactic; and also, he is aware how indifferent they are to vaccination in the absence of such influence.

5. During the year 1864, small-pox was very prevalent throughout this Circle, and while in 1865 only a few sporadic cases occurred, the past year has been remarkable for all but its entire absence. The influence the occurrences of these years had on vaccination is shown in the following figures showing the numbers operated on in each year:—

1863	47,646
1864	69,299
1865	63,251
1866	61,543

6. But the second cause alone will account for more than the whole of the decrease. On making an examination of the records of this office it became apparent to me that certain talookas of the Kulladghee collectorate especially, had not for years, at least, been visited by a vaccinator.

7. In consequence of this, I directed Assistant Vaccinators, No. 88 Jairam Krishna, No. 133 Swamyrao Rungoo, and No. 168 Gungadhur Ramchunder, to operate respectively in the Hoongood, the Mungolee, and the Heepurgee talookas of the collectorate of Kulladghee. Much opposition was met with, especially in the two latter talookas. General No. 133, a man of good character, and possessed of considerable persuasive and conciliatory powers, reported weekly the great opposition and indifference manifested by the inhabitants towards vaccination, and on one occasion that he had actually been assaulted while in the performance of his duty. For the purpose of sustaining the latter charge there was not, as may easily be imagined, sufficient proof; one or even two men's words is of no avail against a whole village! Very frequent references were made to the Magistrates of the district, but even their influence was not sufficient to overcome the opposition. In one case they actually signed a petition to the Mamlutdar stating that they did not wish their children vaccinated. Though very little comparatively was done, I feel confident that this vaccinator will meet with more success when he again visits this district.

In the Heepurgee Talooka matters were even worse, and after a few months' trial the vaccinator had to be withdrawn.

In Hoongood Talooka matters were not quite so bad.

8. Now mark the influence this opposition had on the returns of these vaccinators as compared with the year preceding. Their respective numbers were—

	1865.	1866.	Decrease in 1866.
No. 88, Jairam Krishna	2,006	1,713	293
No. 133, Swamyrow Rungoo	2,246	1,261	985
No. 168, Gungadhur Ramchunder	1,674	795	879
		Total Decrease....	2,157

or more by 449 than the total decrease of the entire Circle for the past year, and I attribute the decrease shown at the head of this report to the extraordinary opposition met with by these men.

9. The highest number vaccinated by a single person was performed by General No. 157 Balloo Ryajee Chulka. He vaccinated 3,146 persons. The average number of operations by the vaccinators of this Circle, excluding those employed as Karkoons in my office, is 1,810 each.

Sex.

10. Of the total number of operations 32,211 were males, and 29,332 were females, giving a percentage 52·3 and 47·5 respectively, or very nearly the same as the preceding year.

Caste.

11. The following table shows the numbers per cent. of each caste vaccinated during the past and preceding year:—

Years.	Christians.	Hindoos.	Mussulmans.	Parsees.	Other Castes.
1865	0·7	89·3	4·3	0·02	6·2
1866	1·7	87·9	4·5	..	5·9

And shows very little change except as regards Christians. The greater number of them (1,047) were vaccinated by General No. 38 Babajee Yadoo (himself a Christian) while employed in and around Bassein.

Age.

12. The number of infants operated on is greater than that recorded in any previous year, and shows that the people are beginning to appreciate the benefits derivable from early vaccination; 24·9 of the operations were on children under one year of age. Greater attention is

now paid to this subject, and I am of opinion that the registers are more accurately kept than formerly. But while such is the result with regard to infantile vaccination, it is most interesting to note that several cases of re-vaccination in grown up persons have come under my observation during the year, and if any sign that the people are beginning to appreciate vaccination was wanted, what could be better than this. Would that the practice was more general.

Result.

13. The percentage of success is almost the same as it was in 1865, there being a difference of $\frac{1}{10}$ of a per cent. only. Not a single false name was discovered during the year. The vaccine lymph has been generally active and the vesicles normal, though in some cases not so well developed as they ought to have been.

Vaccination in Collectorates.

14. The following table will show sufficiently and clearly the progress of vaccination in the several collectorates comprised in this Circle, with regard to their population :—

COLLECTORATES.	Population.	Number vaccinated in 1865.	Number vaccinated in 1866.	Number vaccinated in 1866 compared with 1865.	
				Increase.	Decrease.
Ahmednuggur.....	12,52,789	15,319	13,978	....	1,341
Poona	10,93,693	14,320	12,487	....	1,833
Khandesh	7,78,112	13,820	14,035	215	....
Kulladghee	6,13,479	7,783	5,001	....	2,782
(Western Circle), Tanna..	8,25,077	12,009	16.042	4,033	....

Vaccination under Municipalities.

15. Slowly, but surely, this means of extending vaccination is taking root in this Circle. In Kandeish the funds of the Municipalities are not yet in a sufficiently flourishing state to admit of their entertaining vaccinators at their own expense. In the collectorate of Tanna, the Town of Tanna is the only Municipal Town which entertains a vaccinator. In the collectorate of Poona I am happy to be able to report that during the past year the Municipal Commissions of Sholapoor, Punderpoor, Barsee, and Baramuttee have agreed to employ a vaccinator each. Poona itself has already done so. Beejapoor is the only town in the Kulladghee collectorate which entertains one. The returns are herewith sent.

16. With regard to Municipal vaccination in the collectorate of Nuggur, I addressed the Collector, Mr. D'Oyly, about three months ago, but have not as yet received any reply. The town of Nuggur is the only one in the collectorate which has

a vaccinator of its own. He is not assisted in any way and receives no compensation, as all other Municipal servants do, for dearness of grain. He get Rs. 10 per month.

Small-pox.

17. As already stated in paragraph 3, not a single case of small-pox came under my observation, and very few have been reported to me during the past year. Whether this is a sign of a good and effectual protection time alone can tell; but in the meantime it appears satisfactory. Returns of small-pox will, as soon as received from the several collectorates, be forwarded in the usual collective form.

Inoculation.

18. No case of fresh inoculation has been reported to me during the year, but instances have been communicated in which marked traces were observable of the inoculator having been (though not very recently) carrying on his dangerous occupation. For instance, the vaccinator (General No. 58) employed in the Mahim talooka of the collectorate of Tanna, (General No. 40) employed in the Mawul talooka of the collectorate of Poona, and (General No. 13) also the vaccinator employed in the Trimbuk Petta of the Nassick talooka of the Nuggur Zilla, reported such cases. The two latter talookas are close on the borders of the Tanna collectorate, just above the Ghauts. The inhabitants are principally coolies and take to vaccination or any thing else recommended to them, quite kindly. The children of the villages visited by these vaccinators bore undoubted marks of inoculation as well as deep pitting from small-pox.

Inoculation had been resorted to during the absence of the vaccinator from the talooka. Indeed this appears to be nearly always the case, these men not daring to show their faces when there is a vaccinator in the neighbourhood, the only man who will report him. The whole work is carried on with the connivance, if not the assistance, of the village officials, who receive a moiety of the fees obtained and are consequently interested individuals. As there is not a vaccinator for each talooka, and as the inoculator always carries on his dangerous occupation in the absence of one, and also as it is always carried on with the connivance of the village officers, I beg to suggest that patels and koolkoornees be held responsible, under some penalty or other, that no inoculator follows his occupation within the limits of their respective villages without reporting the case at once to the nearest Magistrate. Something must be done; these are dangerous centres of a loathsome and virulent disease which may or may not spread over the whole country, causing death and devastation on its track, and are I believe, in nine cases out of ten, the cause of at least local outbreaks of small-pox.

19. The vaccinators generally have conducted their duties in a satisfactory manner; of course there have been exceptions as the following statement will show:—

1.	Assistant Vaccinator	No. 80,	Govind Moray,	transferred to Bombay.
2.	Do. do.	No. 160,	Ramjee Bappoojee,	transferred to Nuggur.
3.	Do. do.	No. 176,	Balloo Salvee,	Dismissed the service for indolence, disobedience, &c.
4.	Apprentice do.	No. 269,	Ragoo Vittul,	
5.	Do. do.	No. 265,	Wassoodeo S.	

The following have been entertained *vice* the above :—

1.	Babajee Moreshwur,	General No.	282.
2.	Gunesh Bhow,	do.	288.
3.	Seetaram Suddashew,	do.	289.
4.	Mahadeo Govind,	do.	290.
5.	Kondajee Mukundrow,	do.	296.

Thus—two have been transferred to other appointments ; three dismissed the service, and five in place of them entertained.

Husband's Capillary tubes.

20. Tubes have been used more extensively during the past than in any previous year, but principally for transmitting lymph by post or on the occasion of the sudden transfer of a vaccinator to a considerable distance. They are not used as an alternative of arm to arm vaccination. Lymph has been sent in them to Bombay and numerous other places. To the former, a fortnightly supply for a period extending over several months, was sent, but never having been informed of the result of its use, I am unable to record it.

Talooka Maps in the Murathee.

21. I have been and am making endeavours to procure maps in the Murathee language for each talooka in the Circle. Several have been received and distributed and are found of the greatest use, enabling the vaccinators to carry on their operations in a systematic manner which was impossible formerly.

Resumè of Tour.

22. The tour during the past year was limited to three months. During the remainder of the year, I was Acting Civil Surgeon of Ahmednuggur. On the 1st January 1866 I was at Malligaum in the collectorate of Khandeish. Thence I proceeded through the talooka of that name, examining the work of General No. 60 Annuntrow Tatiajee. The work was well performed, the lymph good and active, and the records of the vaccinator as well as the village officers correct. The registers of small-pox not having been kept by the village officers, arrangements were made for their being attended to in the future. In the middle of the month I entered the Dhoolia talooka where General No. 50 was carrying on his duties in a very satisfactory manner. Here again registers of small-pox had not been kept, as indeed was the case in every talooka I visited, but in communication with the Collector, Mr. Ashburner, proper arrangements were made for the future respecting them. The Petta Songier was next inspected, the work of General No. 50, and was found equally satisfactory with that of Dhoolia. I now proceeded northwards to the Virdul talooka, where General No. 211 Balcrishna Gopal, was working, but not quite in such a satisfactory manner as to meet with my approval. He is a young man, and I am confident that on the next occasion on which his work may be inspected the result will be much more satisfactory. His lymph was not abundant but was good and active. It was here that lymph on ivory points was received from England along with letter No. 64, dated the 6th January 1866, from the Secretary to the Principal Inspector General Medical Department, and a trial of which resulted in complete failure as was reported in my letter No. 15,

dated 29th January 1866. From Virdul I then crossed the Taptee into the Thalner or Seerpoor talooka. General No. 214 was here employed, but his work being indifferently performed I placed him under tuition. He also is a young man. His lymph was not good. After examining the work in this talooka I recrossed the Taptee and visited the Betwud Petta and Amulnair talooka in which last a young Apprentice, General No. 272 Venaik Bappoojee, was employed. The whole of his work was most carefully performed. His lymph excellent, the vesicles large and well formed, and the records neatly kept. He is a very promising vaccinator. Having instructed him in the methods of filling and sealing tubes and of transmitting them by post, he for some months sent me regular supplies which were useful in enabling me to supply the demands for lymph by persons both within and beyond the limits of the Presidency. From Amulnair I proceeded northwards to the Patoonde Petta and examined old work of General No. 140. Thereafter I again crossed the Taptee river and entered the Chopra talooka, where General No. 110 was then employed, and where he had been for nearly two years. After examining 1,608 children of 25 villages very minutely, I am happy to report that his work was in every respect good and nearly every child in the villages I visited was protected. I then went eastwards to Yawul (where I inspected old work by General No. 60) thence *viâ* Bhosawul to Wurrungaum, where I had the pleasure of meeting Mr. Ashburner the Collector. Here I may be allowed to express my thanks to Mr. Ashburner for the valuable assistance I received from him during the time I was in Khandeish, and I am sure that the measures taken by him have been and will be the means of promoting vaccination in the province over which he so ably presides. From Wurrungaum I turned westward, and visited and inspected the work of General No. 140 Gunesh Martund, son of the late most excellent head vaccinator of this Circle. His lymph was good and active. His records well kept and altogether had my approval. Here I again saw General No. 214, who having been instructed in the art was transferred to the neighbouring talooka (Burgaum). Travelling through the Burgaum and Chalisgaum talookas, inspecting old work, I left the collectorate of Khandeish for that of Ahmednuggur, and as the shortest way to it cut across the territories of His Highness the Nizam to Koppurgaum. On arrival there I received intimation that I had been appointed to act as Civil Surgeon at Ahmednuggur. This was on the 24th of March. Assistant-Vaccinator-General No. 160 Ramjee Bappoojee, was here employed. His lymph was active, vesicles well developed, and he was performing his duties with much tact and ability. I filled a number of tubes and distributed them to the vaccinators who I thought most required the lymph. Leaving the Koppurgaum talooka I went, according to directions, direct to Ahmednuggur, where I arrived on the 2nd of April, and where I remained (acting as Civil Surgeon) till the 29th December, when I was relieved by Mr. Dann.

During the three months I was moving in the districts, I travelled 618 miles, visited 154 villages and inspected 8,310 vaccinated children, giving an average of 206 miles, 51 villages, and 2,770 vaccinated children monthly.

Vaccination in Native States during the year 1866.

The Return shows a decrease of 962 operations as compared with last year. The cause of this is clearly traceable to the change of vaccinators. Both the vaccinators have been newly entertained during the past year. Akulkote was, I regret to say, without one for some months, and ultimately I was obliged to entertain a man in whom I had not very much confidence. The Raja not only pays them badly and irregularly, but gives them no assistance whatever. In fact his officials appear to take delight in obstructing instead of assisting him. The vaccinator of last year refused to remain any longer in the Raja's service, and I appointed him to the vaccinatorship under the Municipality of Beejapore.

In the Peint State a new and trustworthy man has been entertained, *vice* the former one deceased. This is one of the most unhealthy districts in the Circle. Malaria, bad water, &c., make fearful inroads on the health of the vaccinators. Last year the vaccinator died: this year the new one was on sick leave for several months, and on recovery, was induced to return to work only by the promise of higher pay. On my recommendation the Revenue Commissioner increased his pay from that of an apprentice to that of an assistant vaccinator, and allowed him Rupee one lymph allowance. He is now working successfully. Service in the Pient Districts is limited to one year at a time in the Revenue and Police Department.

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon H. Day, M.D.

Establishment.—Twenty-nine Vaccinators (Government).
Twenty-five Vaccinators (Native Chiefs).
Ten Vaccinators (Municipalities).

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government..	1865	41,986	....	....	39,779	94·7
	1866	40,948	....	1,038	38,961	95·1
Native Chiefs.	1865	17,142	....	....	15,912	92·8
	1866	18,019	877	....	17,066	94·7
Municipal ..	1865	5,049	....	....	4,524	89·6
	1866	7,229	2,180	....	6,655	92·1

It is satisfactory in this my first annual return to be able to report an increase in the number of cases of 2,019, and also to show that the proportion of successful cases is greater than in the preceding year. This year two extra permanent vaccinators have been appointed, viz. in the Jagheers of Serole and Kurrunwar, and a third temporary one who did duty at Seeren for two months and who was paid out of the fine fund. Of these the Serole man returns 149 cases, the other man of Kurrunwar has not yet sent any returns; and the temporary vaccinator operated on 467 cases, so that to view matters in the same light as in 1865 it is necessary in considering the increase of vaccination in the Southern Circle to deduct 616 cases from the total increase of 2,019, leaving 1,403 to represent the increased work of the establisment as it existed prior to this year. It will be seen that the number of cases returned by the Government vaccinators shows a decrease of 1,038; this is unsatisfactory. The decrease has occurred chiefly in the Rutnagherry Zilla, where I found two men working with very indifferent lymph, and to whom I supplied fresh. I think that this decrease may be accounted for by the increased vigilance of the Civil authorities in our territories in taking care that returns shall be genuine.

With reference to the quality of lymph employed, I think I may, on the whole, speak favourably of it, I have however in the course of my tour found six vaccinators working with lymph of a very doubtful quality. I think it must be considered an interesting question how this degenerated lymph acts. I believe however there is little doubt that the protective influence of it must be very small, as the perfect vaccine vesicles must be considered only as an index of a disease which has passed through the system of the patient; it would have seemed more probable to expect no effect from bad or indifferent lymph at all at the site of the puncture, so that some sort of constitutional effect evidently takes place although not a completely protecting one. During the year new lymph from England of excellent quality has been introduced, and I shall multiply it and spread it as much as possible. I particulary enjoin all vaccinators I visit to be very careful about the quality of the lymph they use.

Having found six men in the course of my tour working with doubtful lymph, I fear that all the cases reported as successful, cannot be accepted as such without considerable qualification. This shows the necessity of frequent inspection to be very great, I fear that in such an immense area as the Southern Circle the attempts on the part of the Superintendent to check fraud must at the best only be imperfect, but I look upon the duty of inspecting the quality of the lymph used as being of the greatest importance.

In the Rutnagherry Zilla and the Sawuntwaree State I found three men working with very doubtful lymph. This part of the country forms part of the Western Circle, the Superintendent of which has not been able to take up his appointment, consequently it has been but little inspected of late years, it is particularly difficult of access, there being no roads, travelling can only be carried on at great inconvenience to the inhabitants, by means of bigarries, who do not willingly come forward to act as coolies.

To enable me to find out if vaccinators remain too long in one place, and also to enable me to find them more easily, and so visit them unexpectedly, I have made them send me fortnightly statements of the name of the place they are at and when they will go to a new place; these reports I find of great assistance to me in my tour of inspection.

I am inclined, speaking generally, to think that there is no very active dislike to the operation, and in villages and towns where the authorities encourage it the parents have their children vaccinated readily. I have found the vaccinators rather fond of making too numerous punctures in the cases they operate on; this I believe acts in some measure in preventing people bringing their children to be vaccinated; certainly to see, as is too often the case, a child's arm almost covered with sores from the shoulder to the elbow does not tend to make the parents of others to wish for the same condition to be present in their own children, and the child being rendered fretful and troublesome by the unnecessary irritative fever present, the inconvenience to the parents must be very considerable; this state of the arm is not brought about by the bad quality of the lymph, but by dirt and neglect on the part of the parents. I have ordered every vaccinator I have visited only to make two punctures on each arm.

I was much gratified when visiting the village of Serole, in the Jagheer of Kurunwar, to find the people have become alive to the benefits of vaccination. One of the villagers told me that about twenty children had died from small-pox, and that those who had been vaccinated escaped; this was the most pleasing visit I have made to any town or village.

On the whole I think I may say that I have been satisfied with the conduct of the men under my orders; I have found it necessary to recommend the dismissal of one man, a Government vaccinator, and he has been dismissed. I have sent circulars round to inform the others of this, so that the warning effect of this punishment should not be lost; if not for this precaution, from their isolated position in different parts of the country, they would probably have heard nothing about it.

Dr. Plumptre speaks favourably of the introduction of peons to assist the vaccinators in obtaining the children, and I am inclined to think they do give great assistance, but there will be some difficulty in preventing their degenerating into mere servants of the vaccinators.

Great delay occurs in obtaining the reports of the Jagheerdars' vaccinators, owing to their being sent first to the Political Agent of the Southern Maratha Country; if the Political Agents were stationary the delay would not be so considerable.

If in the high schools the masters were to say a few words to the boys about the history of vaccination (and such a remarkable discovery might well form part of any lesson on western civilization), I think it would be very beneficial to the cause.

The Southern Circle, excluding North Canara but including Sawuntwaree and Rutnagherry, contains an area of 33,825 square miles, and a population of 47,17,513

inhabitants. The number of cases vaccinated in these districts during the year was 60,938, consequently 1·2 per cent. have been vaccinated during the year. These statistics are, I fear, only approximative, as there has not I believe been a trustworthy census yet obtained. In the *Lancet* of September 22nd, 1866, 588,361 are the number of cases reported as vaccinated during the year in England, being an increase of 51,149. I have unfortunately not the means of reference at hand to obtain the number of inhabitants in England, so I cannot compare the work.

Since joining the appointment in April last I have travelled 1,109 miles, the rainy season being included in this period.

NORTHERN CIRCLE.

Superintendent.—Surgeon R. Dick, M.D.

Acting Superintendent.—Assistant Surgeon H. Cook, M. D.

Ditto. Assist. Surgeon Muncherjee Byramjee Colah, M.D.

Establishment.—Thirty-three Vaccinators (Government).
Eleven Vaccinators (Native Chiefs).
One Vaccinator (Municipality).

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government....	1865	70,212	....	....	66,166	94·2
	1866	69,085	....	1,127	65,463	94·8
Native Chiefs ..	1865	20,118	....	....	18,189	90·4
	1866	22,043	1,925	....	19,986	90·7
Municipality ..	1865	160	....	....	147	91·8
	1866	57	....	103	46	80·7

The above table exhibits a decrease of 1,127 in the number of children vaccinated by the Government vaccinators during the year, as compared with the preceding one, and an increase of 1,925 in the number operated on by the vaccinators of Native Chiefs.

2. I have had charge of the duties of Superintendent of Vaccination for only the last five weeks of the expired year. My predecessor, Dr. Cook, who discharged the duties of Superintendent for nearly the whole of the year, was working at its commencement at Gogo, and during the first month he travelled from Gogo to Bhownuggur, Ranpore, Dhundooka, and Dholera, visiting 23 villages and inspecting the work of General Nos. 52,170 and 91. In February he was engaged in examining the work of General Nos. 91, 177, 273, 56, and 154, and travelled from Dholera to Dholka, Ahmedabad and Prantage, visiting 27 villages. In March, the work of four General Nos. 270,173,111, and 41, was examined, and the Superintendent travelled from Prantage to Morasa, Kupperwunj, Thasra, and Moondha, visiting 32 villages. In April the travelling extended from Moondha to Kaira, Neriad, Annund and Borsud. 25 villages were visited, and the work of General Nos. 127, 63, 188, 221, and 128 was examined. In May the work of four, General Nos. 128, 96, 190, and 235, was seen, and the Superintendent travelled from Borsud to Jumboosur, Amode, Wagra and Broach, visiting 25 villages. In June the work of General No. 293 was examined; 3 villages were visited, and the Superintendent travelled from Broach to Memoodabad and from thence to Kaira, where he quartered for the monsoon. In October, in consequence of being ordered to proceed to Baroda to take charge of regimental duties, the proper work of inspection was not commenced till I took charge of the work on November 23rd, from which day up to the end of the year, I travelled from Baroda to Memoodabad by rail, and from thence viâ Jeytulpoor to Sanund, Veerungaum, Sewamee and Rhadunpoor, and examined the work of General Nos. 127, 63, 20, 31 and 56, visiting 53 villages. During the whole year the travelling has extended over 1,634 miles, 188 villages have been visited, 7,475 children have been inspected, and the work of 30 vaccinators examined.

3. As I have been for so short a time in my present employment, I am unable to make any observations regarding the work of the vaccinators employed in this Circle, but Dr. Cook, on giving me charge of this office, was good enough to furnish me with a memorandum of his views on some of the important points connected with the working of this department, from which it appears that "with a few exceptions the vaccinators have performed their work during the past year with considerable zeal and activity. They have been well supported and assisted by their peons and village officials. I may here mention the readiness with which the assistance of the different Collectors and Political Agents in this Circle was given, and the trouble they have taken to remove obstructions and opposition to the spread of vaccination throughout their respective charges." There has been a considerable increase in the vaccination throughout the Native States, and the conduct of the vaccinators there has been for the most part very good.

4. During the past year a few changes occurred in the Staff of the Establishment. One vaccinator, Pestonjee Dhunjeebhoy, General No. 14, died on 6th April. In September Dulputram Munchoram, General No. 1, retired from the service on pension, and about the end of November, one Motilal Hurgovundass, General No.

249, was discharged the service on account of bad conduct. The vacancies thus produced have been duly filled up. From sickness and other causes about eight vaccinators were incapacitated for more or less lengthened periods from performing their work efficiently. To this, perhaps, and to the loss of lymph during the monsoon, mentioned in paragraph 12 of this Report, may be attributed the slight decrease in the number of children vaccinated.

5. Demands for lymph from various medical men in this Circle have been met with by the supply of capillary tubes charged with fresh lymph, and in conformity with Principal Inspector General's Order, No. 334, this department has regularly forwarded every fortnight two lymph tubes to the Local Superintendent of Vaccination at Bombay.

6. Next to seeing good normal vesicles containing clear lymph, the best proof of the good quality of such lymph would be its effect upon an unprotected constitution. Hence it would be valuable information to this department to know that the vaccine lymph of different localities supplied to others is efficacious or otherwise, for this reason, whenever lymph is forwarded to any Officer, it is invariably requested of him to report the result of vaccination from such source.

7. During the year two supplies of lymph from England were received for trial; one at the commencement and one towards its close; the lymph in both instances produced no good results.

8. In paragraph 4 of last year's Report mention was made of the existence of the practice of inoculation in the district of Bugwara. In the districts travelled through in the year under report, Dr. Cook states: "I could find no single case of inoculation in any of the villages examined, nor did I hear of it in any talooka visited though I made special enquiry concerning it."

9. Municipal vaccination has not much progressed. In paragraph 13 of last Report, it was mentioned that the Municipality of Dakore in the Kaira Zilla was the only one in this Circle that supported a separate vaccinator. But in consequence of smallness of population, that Municipality has given up entertaining a separate vaccinator. In the whole of this Circle there are at present only two vaccinators employed by the Municipalities of Veerungaum and Dholka. Municipal vaccinators are not under the control of this department, and do not report their work; the Superintendent of Vaccination, when he happens to be in a place where a Municipal Vaccinator may be working, examines his work only.

10. In the month of July, small-pox prevailed in Sagbara, a village 45 miles from Mandvee. The Thakore of the village, through the Mamlutdar of Mandvee, asked the assistance of a vaccinator, whereupon the Mandvee vaccinator, General No. 248, was directed to proceed to Sagbara and carry on vaccination there. It was not till the 6th September that actual operations were commenced; in one month 106 children were vaccinated and the result was so satisfactory that the epidemic soon ceased, and the services of the vaccinator and the peon accompanying him were

so highly appreciated that they were handsomely rewarded by the Thakore of the village.

11. In the month of November, Dr. Cook addressed a circular letter to all the vaccinators in this Division, desiring them to report on the different castes of people in their districts who object to vaccination. From the replies to this circular it appears that some of the Kusbatee Mahomedans, the Parsees of the seashore villages of Surat Zilla, a few castes of Hindoos, and fisherman generally still entertain some prejudices regarding this beneficent operation. Dr. Cook states that "with a few exceptions the inhabitants of this Circle generally seem year by year to become more convinced of the benefits of vaccination, and as a rule they are anxious to have their children vaccinated." In many cases also I have known adults voluntarily submit themselves to the operation, though the cases amongst adults in which vaccination would be available or requisite are comparatively rare, for most of them have either been vaccinated when young or suffered from small-pox. There can be no more striking proof of the benefits conferred on the people by this beneficent operation than is displayed by a visit to any of the villages in this district. One is struck at once with the general freedom from the marks of small-pox and other deformities produced by this disease among the young population, while the old inhabitants are scarred, blind, and otherwise horribly deformed by this horrible and loathsome scourge.

12. As regards the quality of the lymph of this circle, the late Superintendent, whose observations extended over 11 months, states that "the lymph has been good throughout the year with one or two exceptions, in those cases in which the vesicles did not seem so good as they should have been, its use was immediately stopped and a fresh supply obtained from those vaccinators who possessed the best lymph." During the monsoon several vaccinators lost their lymph, but a fresh supply was immediately obtained from their nearest neighbours. Owing to the heavy rains and floods I think the loss was to be anticipated, and was not to be attributed to laziness or want of zeal on their part.

SIND DIVISION.

Superintendent.—Assistant Surgeon J. PINKERTON, M.D.

Establishment.—Seventeen Vaccinators (Government).

Thirteen Vaccinators (Local).

One Vaccinator (Native Chief).

ESTABLISHMENT.	YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government..	1865	50,524	....	....	47,618	94·2
	1866	44,126	....	6,398	40,970	92·8
Local	1865	11,891	....	....	11,176	93·9
	1866	23,594	11,703	....	21,300	90·3
Native Chiefs.	1865	816	....	....	681	83·4
	1866	975	159	....	820	84·1

Vaccination progresses in this province in the satisfactory way that it was anticipated it should from the creation of a local vaccination establishment, to supplement the numerical inadequacy of the Government establishment. For the past two years vaccine operations have been carried on in every part, even to the very remotest in the province, from the confines of Cutch, Serohi, and Jeysulmeer to Bhawulpoor on the left bank of the Indus, and from the Murree Hills to the Hubb river on the right bank. I only know of one small tappidarate within the compass of my Circle that remains a virgin field to the vaccinator, and that tappidarate is Veerawah in the Kotree Talooka. It is a small place situated in the hills, distant from Kotree about thirty-six miles in a north-westerly direction, inhabited by Koso Belooches of an independent, and not many years ago, very unruly disposition, who have as yet resisted all overtures most decidedly, and I believe on one occasion threateningly, so that the vaccinator had to abandon the place. I intend to send a vaccinator there shortly, and hope that they will be more reasonable now, as they must have seen the advantages arising from vaccination in their close neighbourhood. I have instructed Jettah Mull to work his way there from the Bheran tappidarate, and to endeavour to induce the Koso Belooches there to accept of his services.

2. Previous to the past year the history of vaccination in Sind does not show a single instance of a native of any position whatsoever, high or low, having made an application for the service of a vaccinator, except in a few instances, made under the dread of the actual existence of small-pox in an epidemic form, in the neighbourhood of the applicants, and under the belief that inoculation was illegal. This is not an encouraging statement after twenty years' practice of vaccination, though it is modified by the fact that vaccination was carried out to a very limited extent up to the period when my predecessor, Surgeon Martin, was appointed Superintendent of Vaccination in Sind ten years ago. Since then vaccination has greatly progressed, and again in the last two years it has been still further and more completely spread by the assistance of the local vaccinators. There seems now to be a change in favour of vaccination, indicating that its benefits are becoming more appreciated by the leaders of the people, for during the past year I received applications from the following places for the service of a vaccinator, viz: talookas of Kusmore, Meerpoor Khas, Kotree, Alliyar-ka-Tanda, Bola Khan's Thana, Meerpoor Matelo, Buddeen, Bage-ka-Tanda, and Doaba. The requests emanated from zemindars, native officials, and others. Their requests were made through revenue officials and vaccinators, a few were also made direct to myself. It is quite certain that all were not made under the dread of the actual presence of small-pox. It is impossible for me to say whether all or any of the applicants would have preferred inoculation to vaccination, but one application contained a request that if a vaccinator could not be given, they might be allowed "to inoculate in their own way." It is encouraging to see the leaders of the people coming forward in this way, and I hope the feeling in favour of vaccination will gradually spread throughout the mass of the population: but the day is still probably far distant when the humble and illiterate Sindhi mother will look forward to the vaccinating of her child, as a duty to herself, her child, and to the State.

3. Another thing I would notice in reference to the gradual effect which the spread of vaccination has produced, and it may be considered very strong evidence of the Sindhis knowing well what the advantages of vaccination are. It is this: in the tappidarate of Jurruck, when Lalloo was vaccinating there last September, there was a disease among horned cattle, which the people considered to be "*mata*" (cow-pox) and they asked that vaccinator to operate on their beasts. I did not hear of this until the disease had abated, but I told Lalloo he might gratify their wish, though from the description of the disease I do not think it was cow-pox, at least I could not get any information regarding the existence of pocks on any part of the bodies of the affected animals. I think in all this there is good reason to infer that vaccination is beginning to be more appreciated than heretofore among the better off and better informed part of the people.

4. The fact is still only too evident that thousands of people submit their children to be vaccinated merely because it is the wish of Government that they should do so, for their faith is very strong in Government doing every thing for their good; on account of this faith it is seldom that the vaccinators meet with any opposition, and

seldom indeed with persistent opposition any where in carrying on their operations, though they have a thankless office to perform, and one which requires the exercise of a good deal of persuasion: to persuade the ignorant is often no easy matter, especially when they have something of their own, inoculation,—which many of them prefer, and it is still more difficult to persuade and overcome the obstinacy of the few, who seem to oppose for the mere sake of opposition, or for the sake of appearing as leaders among their own ignorant fellowmen. But the object and end of vaccination are so good, and so certainly becoming apparent, that we need not fear but that in time the whole of the better informed Sindhis will be as willing to accept vaccination as Government can be to supply them with the means of protecting their children from small-pox, and they begin to see that it has the virtue of not subjecting others to a noxious contagion such as is propagated by variolous inoculation. Among the mass of the ignorant, who do not look forward to any thing further than supplying the needs of the day, we must expect carelessness and apathy in regard to the lives of themselves and children, as well as in all things else. To that class which constitutes the mass in Sind, vaccination presents no time-honoured traditions to hold their fancy. Nothing but their docile yielding to a power, which they know is only wielded for their good, induces them to submit freely, if not thankfully, to vaccination; their traditions would lead them to inoculation.

5. I have much pleasure in again reporting that I and the vaccinators have throughout the past year received the hearty assistance of the revenue and political officers in the province, and further their moral influence has been brought to bear in favour of vaccination, and, to it, I may say, is due in a great measure the great and continued progress of vaccination in Sind.

6. The seventeen Government vaccinators vaccinated 44,126 persons, being 6,398 less than in 1865; still I consider they have done quite sufficient work. The thirteen local vaccinators have vaccinated 23,594 persons, being 11,793 more than in 1865, they have also done sufficient work. His Highness the Meer of Khyrpoor's vaccinator vaccinated 975, being 159 more than in 1865. The total number of vaccinations in 1866 is 68,695, being 5,464 more than in 1865. I think there is good reason to be satisfied with the quantity of work done during the past year.

7. Of the general causes which affect the quantity of each man's work, I am unable to say more than I have already written in my three previous annual reports. This year I have merely to add that towards the end of the past year several vaccinators suffered severely from intermittent fever, which rendered some of them unable to do any work for at least one month, and very little for several months. However, under the circumstances I am quite satisfied with the quantity of work performed by each and all of the vaccinators.

8. The Government establishment vaccinated 24,629 males, and 19,497 females, being 55·81 of the former and 44·19 of the latter in each 100 vaccinated. The local establishment vaccinated 13,105 males and 10,489 females, or in other words 55·54 per cent. of the former, and 44·45 of the latter. His Highness the Meer of Khyrpoor's

vaccinator vaccinated 541 males and 431 females, being 55·48 and 44·51 respectively in every 100. These three establishments differ so very slightly in regard to the relative proportion of the sexes that one would be inclined on that evidence, to believe that the vaccinators have given the correct relative numbers of the male and female children vaccinated by them, but the fact is that the relative proportion is not correct, for I have during my inspections repeatedly found female children entered in the male column, but I have never found a male child entered in the female column. On this account I believe these figures are not entirely correct, notwithstanding the strong evidence of their correctness. I think that the chief reason why there are always so many more males than females is that there are very few of the latter vaccinated after the age of six years, because many females of that age are not allowed to go out in public, especially among Hindoos, whereas there is no such hindrance to males. The late Dr. Ritchie drew my attention to this circumstance as the likeliest reason for the disparity, and I think now that he was correct, still the fact is known to me that female children are entered occasionally in the male column, and there are certainly no objections to vaccinate young female children, and I often see adult Hindoo as well as Mussulman women who have submitted themselves to be vaccinated.

9. There were six Christians (in Kotree), 7,251 Hindoos, 56,620 Mussulmans, and 4,818 other castes (all Shikaris) vaccinated. The relative number of Hindoos to Mussulmans I think is very slightly below what the relative number of Hindoos to Mussulmans is in the general population of the province. No less than 2,584 of the 4,818 Shikaris were vaccinated in the Thur and Parkur Political Superintendency. The vaccinators seldom do any work in the European stations, hence there are so few Christians.

10. There were vaccinated 15,601 under one year old and 53,094 above that age, being 22·71 under and 77·28 above one year old in every 100. I am sorry to say that I consider the columns of ages untrustworthy, and the impression left on my mind after inspecting nearly 8,000 vaccinated children last year is that the number vaccinated under one year old ought to have been very much larger in the vaccinators' returns, probably nearly double what has been reported. In several registers the number of mistakes clearly show that the vaccinators do not give proper attention to the subject of ages. I hope they will be more careful during 1867. I will again issue a circular letter on this subject to all the vaccinators.

11. The result of the operations is here shewn :—

Establishment.	Per-centage of Successful.	Per-centage of Unsuccessful.	Per-centage of Doubtful.	Remarks.
Government....	92·8	1·1	6·0	1·4 Less successful than in 1865.
Local	90·27	2·7	7·0	2·6 Do. do.
Native Chiefs ..	84·1	11·17	4·7	0·7 More do.
Average	89·05	4·99	5·9	3·3 Less successful than in 1865.

From the above table it appears that of those whom the vaccinators saw after vaccination there were 4·99 unsuccessful, of the 7,919 vaccinated children whom I inspected 98·38 percent were successfully vaccinated. It is only reasonable to suppose that a large number of the 4,365 doubtful cases were also successfully vaccinated, although the fact is not known, because the great majority of them were not seen by the vaccinators after the operations. I consider the vaccinators reports, in regard to the result of those vaccinated, as correct as they can be practically; there must always be a small amount of error in the vaccinators reports showing rather more unsuccessful than really exists, because the result of re-vaccinations is often unknown at the time the vaccinators send in their monthly reports, hence the percentage of success has always been greater in my inspection table than in the annual report.

12. The lymph every where has been good. In one instance only did I see bad lymph, and that was in Shahbunder districts, in the hottest time of the year, but even there it was only one day's lymph, the next day's lymph was good. I received a few tubes containing lymph from, I think the local Superintendent of Vaccination, Bombay Circle, I am not sure though, beecause I could not read the frank and there was no letter with it. Hassah Mull used it, and I afterwards saw the vesicles, they were very good indeed. In December I received one tube containing lymph from the Principal Inspector General Medical Department, which had come from England and also at the same time a few ivory points charged with dry lymph. I used both the fluid lymph in the tube and the dry lymph on the ivory points myself on young children, who had never had any kind of eruptive disease, so that there could be no doubt about their being unprotected, and yet the lymph was quite inert.

13. From the month of January to July of 1866 the existence of small-pox was reported from several talookas, generally the disease seems to have been in a mild form, and subsequent enquiries have shown that in some instances it was only chicken-pox, measles, or both. These two infantile diseases were very prevalent in several widely separated parts of Sind during the first half of the past year. It would be very interesting to know how many were attacked and died of small-pox, and of these how many had been vaccinated, but such information cannot be obtained. By the commendable industry of Hassah Mull, 1st Assistant Superintendent of Vaccination, I am in a position to give the particulars of an outbreak of small-pox in the village of Jadoo Khan Lagari in the tappidarate of Alliyar-ka-Tanda. It appears that Chanderam, local vaccinator in the talooka of Alliyar-ka-Tanda, wanted to vaccinate all the unprotected children in the village of Jadoo Khan Lagari in the month of August last; he did vaccinate a number of Mussulmans, but the Hindoos obstinately and persistently refused to have their children operated on. Small-pox attacked nineteen unprotected Hindoo children in November, and of these five died, one became blind of one eye, and another totally blind; this gives the frightful percentage of 25·8 deaths to attacks, and this in a village surrounded by a cordon of vaccinated villages. One stands aghast to contemplate what the awful loss of life would be in

an unprotected population under a wide-spread epidemic of such virulence; truly small-pox maintains the awful fatal character ascribed to it by the writers of the last century. De la Condamine estimated that "small-pox destroys, maims, or disfigures the fourth part of mankind." (Memoire sur l'inoculation de la petite verole, 1754). Here in Sind we have more than realized this estimate in a single and an isolated village. The Mukhi, who would not assist with his influence or example to get these children vaccinated, must have an easy conscience, if he feel no remorse for his conduct; no doubt he soothes his own and his friends' afflictions with the balm that it was the will of *matadeo*. I feel well convinced that had there not been so many protected children, and had there not been so many vaccinators in Sind, we should have had a severe epidemic of small-pox in several districts during the early months of the year. With my present strength of vaccinators I was able to surround small-pox, wherever it made its appearance, with a wall of vaccinated children, and so prevented the circumfusion of the disease. I think I am not saying too much for my establishment by asserting my belief that the activity of the vaccinators saved many young lives to the State.

14. In my report for 1864 I stated my opinion, that with sufficient vaccinators, the very name of an inoculator would disappear from the province. At that time, I, in common with most people, was under the belief that inoculation was illegal, the opinion of the High Court of Bombay in the matter of the Tanna inoculator has set me right. Since then only one inoculator has been known to practise, and that was last year in the talooka of Buddeen. I still believe that the Native Sindhi inoculator will disappear completely, because he has no chance of making a decent living in competition with so many vaccinators. The man who practised last year in the Buddeen talooka, by name Boodhoo, was reported to me by local vaccinator Ram Chund, I endorsed his report to Captain Gillespie, then Deputy Collector of Mahomed Khan's Tanda district, who had Boodhoo arrested, tried and convicted by the subordinate Magistrate of the talooka, and sentenced to pay a fine of Rupees twenty-five, or in default to go to prison for a month. This sentence was reversed by the Sudder Court of Sind because inoculation is not illegal. Mr. Mansfield considers that "there is no necessity for special legislation to render the practice of inoculation in Sind penal" and "that the influence of the Magistrates and their Deputies is quite sufficient to stop it altogether". And he has instructed the Judicial Commissioner in Sind "to issue a circular to the Magistrates and their Deputies to assemble the people of any village in which a case of inoculation is reported, and to point out to them the danger the whole community is exposed to by the practice, and also to hold the head men responsible that a case does not occur again." When I recommended that inoculation should be made penal, I was under the belief that an inoculator could legally carry on his deadly work in the face of all authority; this impression I derived from the Judicial Commissioner's letter No. 2053 of 28th November last to the Magistrates of Hydrabad, in reference to the case of Boodhoo; hence my strong recommendation that it should be made penal. I think Mr. Mansfield's

action will have the effect of suppression of inoculation, especially as I know that no inoculator can practice long without the vaccinators reporting it to me. Since the time when Mr. Mansfield drew the attention of the Magistrates to the suppression of inoculation—nearly three years ago—it has virtually ceased, and at the present time it is no obstacle to the spread of vaccination. I may here mention an incident in regard to inoculation. Hassah Mull last year successfully vaccinated one of the Hydrabad Meer's sons. A month afterwards the child was variolously inoculated, but the only effect produced was a sore on the seat of inoculation; this showed effectually the great protecting power of vaccination, and I believe was viewed with agreeable surprise. Hassah Mull was presented with a very handsome and valuable shawl by the Meer.

15. The only other real obstacle is the indifference of the mass of the people, but even they, in general, accept vaccination when put to no trouble about it; and when it is brought to their doors, it is only a very few Hindoos who really and absolutely try to avoid it.

16. In paragraph 14 I have stated the measure adopted by the Commissioner in Sind for the suppression of inoculation and my belief that it will be effectual. As to the apathy in regard to protecting their children's lives by vaccination, it is doubtful if that will ever be removed from the mass in any country; even in Sweden it is by the ever active and intelligent energy of Clergymen, Medical men, and Government officials, that the mass of its inhabitants have been so thoroughly well protected by vaccination as almost to have annihilated small-pox in that country. In Sind the same kind of influence I am happy to say is ever at work. The obstinacy of the Hindoos has a kind of religious element in it, or rather an element of fatalism, which it is difficult to grapple; probably the best means short of compulsion would be the publication of a Sindhi pamphlet on the subject of small-pox, inoculation and vaccination; as a great many Hindoos can read Sindhi in at least some one of the characters in which their language is written, it would I think do good, and it is the most feasible way I can think of.

17. So much has been done by Mr. Mansfield for the more effectual spread of vaccination, by increasing the number of vaccinators and for the suppression of inoculation, that there is little more to be done but to work well with my establishment and trust to time and vaccination's own merits. Perhaps a Sindhi pamphlet on the subject, as above mentioned, might have some influence with the Hindoos, and induce them to accept vaccination more freely than they have ever yet done.

18. At the commencement of the past year I was engaged in Gotekee talooka, Rohree district, inspecting the work of General No. 79, Suroop Sing, and in every respect it was found highly satisfactory. I saw over 1,600 vaccinated children in 63 villages, and only found three errors in his register; they were: one child not vaccinated and one more vaccinated in two villages than were entered in his register. Suroop Sing deserves great credit for his care as a vaccinator, for his truthfulness and for the exactness with which he keeps his records, especially when these are

taken in conjunction with the great number of his vaccinations. He vaccinated nearly 6,000 children last year in the Rohree districts. Proceeding towards the frontier of Bahawulpoor State, I examined the work of local vaccinator Hazari Mull in Oobaora talooka, as he had only recently been sent there, at the time of my visit he had not done very much work. I saw 196 vaccinated children in 10 villages. His lymph was excellent, there was not a single unsuccessful case among the whole of the children, nor a single error in his register. Having completed my inspection in the Rohree districts, I crossed the river and entered the Upper Sind Frontier district of Jacobabad, marched by Kushmore and along the old line of outposts, to Meerpoor. Here I received in January, from the Principal Inspector General Medical Department, five ivory points charged with vaccine virus, which had been sent from England by the Secretary of State for India. I vaccinated two children with them carefully and according to directions sent with them, but the lymph was quite inert. At the same time I vaccinated two other children with tube lymph, which I had by me, and this took well and produced good vesicles. On the day of vaccinating these children a number of people brought their children to my camp to be also vaccinated, but I desired them to wait until the following week, so that they might be vaccinated from arm to arm. Nobody had ever before been vaccinated in Meerpoor, and the fact of two being unsuccessful out of four, made the people very shy of submitting their children when the lymph became ready; that is to say, eight days after the four were vaccinated, whereas on the day of operating the whole of the children in the place would have been freely offered. However, on explaining the whole circumstance to a few of the principal inhabitants, they understood the matter, and removed the fears of the rest of the people, who then submitted all their children. In this talooka (Sarhad) I examined over 300 children recently vaccinated by General No. 114, Assoo Mull, in 9 villages, and of the same vaccinator's work, 561 children were examined in 9 villages of Shikarpoor talooka. I consider this man's work very satisfactory indeed. After he had gone over Shikarpoor talooka I ordered him to take his lymph across the Bigari Canal and work in Sarhad talooka of Jacobabad district, not expecting that he would be able to do very much work, but to my surprise I found him doing abundance and getting on pleasantly with the inhabitants. He said he had to do a good deal of talking to explain the benefits of vaccination, and that he was very much indebted to the Mookhtiarkar of Sarhad for assisting him in explaining the advantages of vaccination to the zemindars of the talooka. In the Jacobabad talooka I examined the work of General No. 27 Luchmon; 227 children were seen in 19 villages, his returns were quite correct, the vesicles were rather small, attributable to Luchmon using glass lymph, because the people were very averse to carrying their children from their own to other villages. I had instructed him to deal very gently with the inhabitants, in order that nothing should stand in the way of their submitting their children to be operated on. The population of this talooka is much thinner than that of Sarhad, hence Luchmon had done fewer operations *per mensem* than Assoo Mull, but on the whole

I consider he had done very good work under the circumstances. He was in the habit of vaccinating one day a week at the Hospital of the 2nd Regiment of Sind Horse, all children voluntarily brought from the lines, in addition to carrying on his own duties outside among the villages. In the same talooka the work of local vaccinator Kisher Chand was examined in the Cutchee, 480 children were seen in 31 villages. I consider his work very well done, his records were true, neatly kept, and his general behaviour was every thing I could desire. From Jacobabad district I passed into Larkhana district, and in the talooka of Kumber examined 250 children in 19 villages, who had been vaccinated by General No. 247, Shankat Rai. His work was pretty well done, his records true and lymph good. He was suffering from bad health; he subsequently got six months' sick leave, during which he died. In the Nusseerabad talooka the work of local vaccinator Jani Mull was examined and found satisfactory. From the district of Larkhana I marched to Mehur, with the intention of inspecting the work of General No. 230 Allah Buksh in the talooka of Mehur, but found him dying in the Hospital there: he died a few hours after my arrival. Thence passed on to Tigr talooka to inspect local vaccinator Hasso Mull's work, but on examining his records, I saw that they were in a measure falsified, I bluntly accused him of falsification and pointed out from his own weekly reports that his register could not be correct. I believe his faults chiefly arose from laziness and carelessness; I dismissed him from the local establishment. He had only been employed in a talooka by himself four months. From Mehur district I passed down into Sehwan district, and in the talookas of Sehwan and Dadoo examined the work of local vaccinator Rughu Mull, with which I was tolerably well satisfied; his lymph was good but his records contained some errors in the sexes and ages columns regarding which I cautioned him; they were of a very minor description and such as a little more care could have prevented. I also examined some work in the talookas of General No. 77, Jettah Mull, and found it satisfactory.

In the month of April I received temporary charge of the duties of Civil Surgeon at Kotree from Assistant Surgeon McConnell, and handed them over to Assistant Surgeon Colvill in May; during the month I did all I could to further vaccination in the town and neighbourhood of Kotree.

In April and May I examined the work of General No. 148, Lalloo, in Doaba talooka of Hydrabad collectorate and also in Kotree talooka. This vaccinator carried on work on both sides of the river for a few months on account of my having received a report of the existence of small-pox in and about Kotree, at a time when the Municipal vaccinator had been dismissed by the Municipality, but on my arrival in Kotree I only found measles and chicken-pox. I found Lalloo's work, as it always has been, in every way highly satisfactory. Towards the end of May in the Jurruck districts the work of local vaccinator Choteer Mull was examined; it was not so well done as it might have been; this man's house is in the town of Tatta, and he was in the habit of going too often to it to the neglect of his duty. He has since been dismissed for losing his lymph and not exerting himself to obtain other lymph

from the vaccinator on the other side of the Indus, within a few miles of his working ground. From Jurruck district I crossed into Shahbunder district. In the Beyla talooka the work of local vaccinator Nubby Bux was inspected. One day's lymph was bad, next day's good: there was a strong hot wind blowing at the time, which Nubby Bux said was the cause of the deterioration of his lymph, but I observed that such a general cause would have made both day's equally bad. The fact was he had vaccinated one village in the heat of the day, under a strong hot wind, and the other in the cool of the early morning. In the hot months the operations should all be performed in the cool of the early morning, or the probabilities will be many against the vesicles being good and well developed. I ordered him to vaccinate in the early morning only throughout the hot season. During June and July I saw about 360 vaccinated children in 28 villages, the work of Lalloo, the Municipality of Kotree's vaccinator, Majlis Rai, and local vaccinator Ramzan in the Doaba and Kotree talookas. In these months several new hands were trained to vaccinate under Lalloo. In the month of August I went to Kurrachee, with the object of inspecting work on both sides of the Mulleer, which had been performed by local vaccinator Ram Chund. A day or two after I reached Kurrachee, the floods rendered it impossible to inspect any villages near the Mulleer. I returned to Kotree by the first passenger carrying steamer which left Kurrachee. *En route* I examined the vaccination records at Khetty Bunder dispensary. The Hospital Assistant there said there were no children left in the place to vaccinate, except a very few who were suffering from ague. In September and October I again saw some work which had been performed by Laloo, Majlis Rai, and Ramzan. In October Hassah Mull, 1st Assistant Superintendent, charged a number of capillary tubes, which were distributed to the dispensaries. During September and October Lalloo, assisted by several new hands, did a good deal of work beyond the *Nai* Barran, where the people of the plains graze their cattle during the inundation months. I saw some excellent work in the hills there. In November I examined some work of General No. 77, Jettah Mull, in Kotree and Manjhandah talookas, and found that it had been very satisfactorily performed; although from ill-health he had not been able to do as much as usual. After examining the work of Jettah Mull I proceeded to Sehwan and in the talooka of that name examined the work of Rughu Mull. I found his lymph very good and his vaccinations very carefully performed; but had again to find fault with him for making mistakes in the columns of ages, several children were entered in the column "above one year" old who were under that age. In other respects his records were quite correct and very neatly kept, so on the whole I was satisfied with him. From the Sehwan district I entered Mehur district and in Kukkur talooka inspected the work of local vaccinator Chellah Ram, with which I was very well pleased. From thence passed into Mehur talooka where I examined the work of local vaccinator Ramzan, which was also fonnd very well done. Thence entered Larkhana district and *en route* saw a few children who were vaccinated in the preceding year by (then local vaccinator) General No. 294, Jani Mull, in the talooka of Nusseerabad.

The marks were very good. I observed that there was a considerable number of children still remaining unprotected in the villages along my route, from which I fear that the talooka of Nusseerabad was gone over too quickly. Several people brought their children for me to vaccinate; I have never known of people doing this in any other collectorate than this of Shikarpoor.

19. I tested closely, the work of six Government and nine local vaccinators, and also examined, without testing the records, some work of three more Government vaccinators, one Municipal vaccinator, and one apothecary in charge of a dispensary; in all nineteen individuals' work has been examined by myself. Their work was spread over the Kurrachee and Shikarpoor Collectorates and Upper Sind Frontier district. I did scarcely any work in Hydrabad Collectorate and Thur and Parkur Political Superintendency. Hassah Mull, 1st Assistant Superintendent, has superintended and tested the work of the vaccinators there, and all his reports have been very satisfactory. He examined the work of local vaccinators Chandiram, Soomar and Ram Chund, and of Government vaccinators General Nos. 165, 142, 199, 195, 246 and 250. He pursued the same method as myself, viz., calling the names of the vaccinated children over from the registers. He also inspected the condition of the lymph in use at the dispensaries of Alliyar-ka-Tanda, Halla, Oomercote, Nuggur Parkur, Mittee and Mahomed Khan's Tanda, and frequently supplied them with lymph. I examined 7,919 vaccinated children in 377 villages. During the year I travelled 1,452 miles between encampments. Assoo Mull, 2nd Assistant Superintendent, examined in the Kurrachee Collectorate the work of local vaccinators Choteer Mull, Nubby Bux, and Sookanund. He also inspected the lymph at Jurruck dispensary and started work by means of tubes at the dispensaries of Bola Khan's Thana and Meerpoor Buttora. Altogether fifteen Government and thirteen local vaccinators' work has been inspected during the past year; in short, every man's except one. To give an idea of the ground gone over in inspecting and superintending the work of the vaccinators, it is neccessary to say that one man's work was examined at the extreme end of the Thur and Parkur district, another's on the Jeysulmeer boundary beyond Kessrah, a third's in Oobaora talooka on the Bhawulpoor boundary, a fourth's near the Murree hills, a fifth's in the Cutchee between Jacobabad and the hills to the west of that station, and a sixth's in Kohistan. I can say that neither myself nor Hassah Mull have spared any trouble or labour in trying to spread vaccination to the utmost limits of this province, and by inspecting the work in such remote talookas we have shown the vaccinators that their remoteness will not protect them from detection should they falsify their records or do any other wrong thing.

20. When I was in the Jacobabad district, Mr. Bolton called a meeting of the Zemindars, Mukhis, and other influential residents of the Sarhad talooka; it was held in one of his tents on the 29th of January 1866, at the village of Thoul. The meeting was well attended by the Zemindars, Mukhis, and Patels of villages. Mr. Bolton and I spoke to the meeting on the subjects of vaccination, inoculation,

and small-pox; they appeared to be highly interested, freely asked questions about vaccination, and appeared quite ready to accept it, which they have since done.

21. Before my arrival in Jacobabad district, Lieutenant Colonel Malcolm Green, Acting Political Superintendent of that frontier, had very kindly given a *purwana* to Luchmon, and Mr. Bolton had given one to Kishen Chund. At the time of writing my last Annual Report I was ignorant of these *purwanas* having been granted, and as the people of Sarhad talooka had asked for Assoo Mull's authority to vaccinate, I considered it advisable to recommend that a Sindhi Circular should be issued to all Zemindars, Native officials and other influential persons, setting forth all the advantages of vaccination. Mr. Mansfield, on receiving my recommendation, was pleased to give instructions for such a Circular to be issued, and it was so, with, I have reason to believe, satisfaction to the people and benefit to the vaccinators. It is very pleasing to be able to say that nearly the whole of the Jacobabad district has been once gone over in less than two years, after remaining all but untouched for nearly twenty years, and that not a single complaint has been made against the vaccinators by any one.

22. With only two exceptions, the conduct of the vaccinators has been very good, and they have carried on their duties in a creditable manner. The two exceptions were Wuttun Mull and Chellah Ram, regarding whom I received from the Mookhtiarkar of Methe a complaint of their taking children with vesicles on their arms for the purpose of vaccinating from them from their own to other villages in an uncourteous and rude manner. I requested Major Tyrwhitt to do me the favour of investigating into the circumstances; he very kindly did so, and informed me that those two vaccinators had been rather zealous and inconsiderate, but he did not consider them deserving of dismissal from the service. Major Tyrwhitt subsequently did me the favour to inform me that he had looked at some of Chellah Ram's work in the Nuggur Parkur talooka and that be considered it well done. Under these favorable circumstances I merely cautioned those two men to be extremely careful that their conduct be always courteous, that they pay parents fully for their loss of time. I am very much indebted to Major Tyrwhitt for the active interest he takes in the progress of vaccination in his Political Superintendency and for the aid he is at all times so ready and willing to give me. The Head Vaccinator, Hassah Mull, who is also 1st Assistant Superintendent in the local establishment, has done remarkably good service throughout the year in superintending the work of the vaccinators employed in Hydrabad collectorate and in the Thur and Parkur districts.

23. The practice of begging "*Murad*" still obtains with the majority of my men, though I have reason to think that it is now done in a much more delicate way than it was before I took notice of it, and several of the vaccinators affirm that they have completely abandoned the practice. I am very happy to say that during the past year no complaint on this score reached me. Mr. Mansfield, in his memorandum No. 35, dated 21st April 1866, submitting the Annual Report of Vaccination in Sind for 1865, for the information of Government, was pleased to

state in its 11th paragraph, with reference to this habit of begging "*Murad*" from the parents of vaccinated children that "the most effectual method of preventing it would appear to be increased supervision. He has one Assistant Superintendent, if three or four more were appointed the proceedings of vaccinators would be thoroughly supervised." Beyond a doubt the want of Native Assistant Superintendents is the one defect in the now famous Bombay system of vaccination, for it stands an evident impossibility that either I or any other Superintendent can so closely supervise vaccinators spread over fifty or sixty thousand square miles, as to prevent occasional misconduct; systematic falsification of returns can be prevented by calling over a few thousand names in the course of the year, but there are many things which should be attended to more closely than they have ever yet been. I have now, through the liberality of the Commissioner in Sind, two Assistants, but it would probably be better if I had one for each collectorate, or rather one for Kurrachee collectorate including Kohistan, one for Hydrabad collectorate and Thur and Parkur Political Superintendency, and one for Shikarpoor collectorate and Upper Sind Frontier Political Superintendency, that is to say, one more than I have at present; such an addition to my establishment would involve an additional expenditure of Rupees two hundred and forty per annum, and I believe it would be money very well spent, because the quality of the vaccinations is of infinitely more importance than the number of them. If this suggestion of Mr. Mansfield be adopted, it would leave hardly a thing to wish for as far as supervising the work of the vaccinators and controlling their conduct is concerned.

KATTYWAR CIRCLE.

Superintendent.—Surgeon E. R. Butler, M.D.

Acting Superintendent.—Assistant Surgeon C. Joynt, M.D.

Establishment.—Eight Vaccinators (Government).

Thirty Vaccinators (Native Chiefs).

Establishments.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government..	1865	6,940	..	..	6,654	95·8
	1866	6,563	..	377	6,417	97·8
Native Chiefs.	1865	20,079	..	..	18,469	91·2
	1866	26,759	6,680	..	24,878	93·0

The returns which accompany this report exhibit a total number of vaccinations in the Kattywar Circle during the past year of 33,322, an increase of 6,303 on the number vaccinated in the preceding year. Of the total number vaccinated, 6,563 (a decrease of 377) were vaccinated by the Government establishment, and 26,759 (an increase of 6,680) by the Native Chiefs' establishment.

The per-centage of success reported by the Government vaccinators is 97·77 (an increase of 1·9 on preceding year); and by Native Chiefs' vaccinators 92·97 (an increase of about 1.)

I am unable to explain why the Government vaccinators have been less successful in 1866 than in 1865.

The increase observable in the returns furnished by the Native Chiefs' establishment is to be explained in the following manner:—

Two vaccinators had failed to send in their returns for November and 18 for December 1865, when Dr. Butler compiled his report for that year. Having been afterwards sent in they were incorporated in the returns for 1866. The number thus accounted for is 1,831.

Six additonal vaccinators have been employed by the Native Chiefs, 3 having been engaged in July, two in September, and one in October 1866. These recently entertained men report having vaccinated 1,989 children. The *bonâ fide* increase on the preceding year is to be attributed, and (from the inquiries I have made) appears to be fairly so to a greater willingness on the part of the people to have their children vaccinated, as well as to increased exertion on the part of the vaccinators.

The quality of the lymph is reported to have been good, and the vesicles well formed. I have myself inspected the children vaccinated in the town of Rajcote and in some of the adjoining villages, and have nowhere else seen better developed vesicles or purer lymph. The vaccinators have kept up a good supply of lymph during the year.

As in former years, the Political Agent and his Assistants have effectively and promptly aided the exertions of the Superintendent in promoting vaccination in the Circle. Apparently their example has not been lost upon the Native Chiefs, who have evinced a greater interest in its success, and rendered more efficient aid than in former years. In the districts of the Chief of Nowanuggur alone have the vaccinators complained of the insufficient aid afforded them. The fact that three additional vaccinators were employed in 1865, and six in 1866, is a proof that the blessings conferred by vaccination are beginning to be appreciated by the Chiefs.

I have no reason to believe that any false returns have been sent in.

Small-pox was reported as existing in Wankaneer and in Morebee in February, as very prevalent in March, as existing in the Goondul, Nowanuggur, Wankaneer, and Dhurole districts in May, and in the Jaitpoor and Goondul districts in December. I am ignorant of the circumstances under which this disease occurred, and of the extent to which it prevailed.

Having only assumed charge of the duties of Superintendent on the 20th December, I am not in a position to report with any approach to accuracy on the conduct of the vaccinators in the Circle. Some of them have been negligent in sending in their monthly returns. The impossibility of inspecting the work of the vaccinators in their districts (since the departure of Dr. Butler in July) by the gentlemen who have successively had charge of the office, viz., Mr. Burrows, Mr. Dann, Dr. Williams, and myself, has doubtless operated prejudicially on the vaccinators, who appear to need a continuous surveillance to keep them to their work. This may account for the decrease in vaccinations performed by the Government vaccinators.

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon W. FLEMING.

Acting Superintendent.—Assistant Surgeon J. T. WELSH, M.D.

Establishment.—Five Vaccinators (Government).

Five Vaccinators (Native Chiefs).

ESTABLISHMENT.	YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government (Punch Mahals) ..	1865	3,337	..	..	3,015	90·3
	1866	5,833	2,496	...	5,296	90·8
Native Chiefs.	1865	3,994	..	..	3,988	99·8
	1866	4,855	861	..	4,741	97·6

From the above statement it will be seen that in the Punch Mahals, during the past year, a much greater increase has taken place in the amount of work performed than during any previous year. This satisfactory result is almost entirely owing to the diligence of the assistant vaccinators themselves, and is only to a very slight extent due to greater facilities afforded by the people. Indeed in many parts of the districts opposition to the operation continues very strong, and even in the large towns, the inhibitants although generally speaking not opposing, remain as apathetic as ever. The increase did not occur in any particular district, but was common to them all, and throughout the year the conduct of the vaccinators with the exception of General No. 279 at Jahalode, was all that could be desired. General No. 253, at Dohud, vaccinated the greatest number of children, and is intelligent, energetic, and truthful.

His lymph was always good, and the result of his operations most satisfactory. General No. 254, at Godra, is next on the list as regards numbers. He had travelled over a greater extent of ground than any of the others, and his work was also satisfactory and truthful. In the month of September, however, his lymph degenerated and until fresh lymph was introduced from Dohud the proportion of doubtful and unsuccessful cases was understated in his returns. At Kalole the work performed by General No. 255 was extremely good, the vesicles and cicatrices being large and well formed. General No. 262 at Halole was not so successful as the above vaccinators. His returns, however, were correct, with the exception of the proportion of successful operations, which were greatly exaggerated. He was cautioned to be more careful in future, and fresh lymph was introduced into his district. As regards General No. 279 at Jahalode two or three fictitious entries were found in one of his returns, but as the date of his appointment was comparatively recent, and as the false entries were made under peculiar circumstances, he was simply fined, and allowed to retain his appointment on further trial.

Although there has been an increase of vaccination in all the five Native States in the Rewa Kanta, the performance of the work has not been satisfactory. During the past year, as was the case in all previous years, the two vaccinators in Rajpeepla performed a very large proportion of the total number of operations. At an early period of the year, the other three vaccinators were dismissed, one for theft, another for inefficiency, and the third for insubordination. In their stead a vaccinator (previously discharged from this Circle) was appointed to the vacancy in Ballasindoor, and Loonawara, and candidates from the Northern Circle were appointed to Chota Oodeypoor and to Barriah. The conduct of the former has been remarkably good, but the two latter turned out so untrustworthy that they were dismissed before the termination of the year. The assistant at Chota Oodeypoor did not increase the number of entries in his returns by making false ones, but the Barriah assistant in one return had no less than forty-one fictitious and only six truthful entries. He was heavily fined before dismissal, but should a similar case occur again the offender will be handed over to the Police authorities for punishment.

The superintendent's tour extended over Dohud, Godra, Kalole, Halole, Chota Oodeypoor, and Barriah, the time allowed being only three months. The method of inspection adopted was that described by Dr. Turnbull of the Central Circle, in his report for the year 1864, all previous attempts to carry into effect Government Resolution No. 1100, of 25th June 1864 having failed, as Tulatees in this Circle are few and far between, and Patels as a rule unable to write. Considerable time was spent in visiting the parts of Halole, Barriah, and Chota Oodeypoor, where opposition is strongest, and in endeavouring to convince the people of the benefits to be derived from the operation. Those who objected could give no reason for doing so, and perseverance on the part of the vaccinators will ultimately meet with success.

A slight epidemic of small-pox occurred in Dohud in the months of April and May, and a few cases were also met with in some of the villages of Barriah and

Halole; with these exceptions this Circle appears to have been free from epidemic disease.

The Civil authorities in the Punch Mahals and in the Rewa Kanta gave considerable assistance to the vaccinators, as well as to the Superintendent. The appointment of a head vaccinator for general duty, and of one or two apprentices, would be of great benefit, as it is extremely difficult to get suitable men to accept the appointment of assistant vaccinator.

PRESIDENCY DIVISION.

Local Superintendent—Sub-Assistant Surgeon ANUNTA CHUNDROBA.

Establishment.—Six Vaccinators.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	7,829	..	..	5,646	72·1
1866	8,866	1,037	..	6,669	75·2

During the past year 8,866 persons were vaccinated, being an increase of 1,037 over the total vaccinated in the year preceding it. Of these 5,003 were males and 3,863 females; 5,399 Hindoos, 1,461 Mussulmans, 1,185 Christians, 619 Parsees, and 202 of other castes chiefly Jews; 3,596 under and 5,270 above one year of age.

Of the total operations performed 6,669, or a percentage of 75·2 were successful, in 896 they failed, and in 1,301 the result could not be ascertained. The increased percentage of success as compared with that of the previous year is not owing so much to any appreciable decrease in the failures of the operations as to the ascertainment of the result in more cases than was done in the previous year, as was to be expected from the increased number of hands working in the department, though even this falls far short of the hopes entertained at the commencement. Peculiarly circumstanced as the department is, and the natives, as it were in a body, trying their best to evade the search of the vaccinators for fear of their being called upon to supply lymph, it beccomes an extremely difficult, if not almost an impossible, task to ascertain satisfactorily the results in all cases operated upon. I am more convinced than ever of the absolute necessity of an authoritative interference of the Government in the matter.

The lymph in use has been throughout of an excellent quality; great assistance was derived from the charged capillary tubes received from the several Divisional Superintendents.

VACCINATION UNDER CIVIL SURGEONS.

TANNA.

One Vaccinator (Municipality) under the Civil Surgeon,
Assistant Surgeon H. ATKINS.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Succesfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	109	..	..	100	91·7
1866	202	93	..	195	96·5

During the past year 202 persons have been vaccinated by the vaccinator employed by the Municipality, of whom 137 were males, and 65 females, 58 being under one year of age. An increase of 93 operations over last year is thus shown. Vaccination was carried on for the whole year, excepting during the month of October, when it failed, and I was not able to restore it till November. The lymph has been good, and the vesicles well formed. The vaccinator seems willing and diligent, but complains of the difficulties he has to contend with from the opposition and aversion of the inhabitants ; I hope that by tact and perseverance it may be overcome.

POONA.

Three Vaccinators under the Civil Surgeon,
Surgeon T. B. BEATTY, A.B., M.D. (*Acting*).
One Vaccinator (Government).
Two Vaccinators (Municipality).

ESTABLISHMENT.	YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
			Increase.	Decrease.		
Government..	1865	1,537	....	....	1,229	79·9
	1866	1,699	162	....	1,378	81·1
Municipal ..	1865	....	....	....	....	....
	1866	1,389	1,389	....	1,090	78·5

There has been an increase in the total number vaccinated during the past year compared with the previous one. At present there are four vaccinators for the Poona City and Cantonment, two of these have lately been engaged by the Municipality for the use of the residents in the City only. The vaccinator attached to this Hospital also finds employment there, but the entertainment of his services would appear now to be superfluous. The 4th vaccinator is employed under the Staff Surgeon and his duties are confined to the inhabitants of the Cantonment only.

AHMEDNUGGUR.

Two Vaccinators under the Civil Surgeon,
Assistant Surgeon H. T. DANN, B.A. (*Acting*).
One Vaccinator (Government).
One Vaccinator (Municipality).

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865.....	1,480	..	..	1,183	79·9
1866 { Civil 1,080 / Municipal 566 }	1,646	166	..	1,431	86·9

It may be observed by a comparision of the accompanying returns with those of the year 1865, that the number of vaccinations effected this year has been in excess of the preceding annual period by one hundred and sixty-six.

Small-pox was entirely absent, and the necessity for vaccination not so constantly before the eyes of the public.

As to sexes, 993 were males and 653 females; 844 were under one year and 802 above that age.

SATTARA.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon H. V. CARTER, M.D.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	914	..	..	786	85·9
1866	1,611	697	..	1,536	95·3

A considerable increase in the number vaccinated during this year, as compared with the previous year, is the chief feature in the appended return. This increase amounts to 697, or upwards of 75 per cent. on the total of 1865.

Another satisfactory result is the increase of percentage of success which amounts to 95·34 as compared with 85·9 in the year 1865. I know of no reason to doubt the correctness of the first named datum, it is certainly a very good result to obtain.

From both causes, enumerated above, there have been very nearly twice as many persons successfully vaccinated in the year under report, as in the previous year. The explanation of the vaccinator is simply to the effect that many more children were brought this year to the Civil Hospital than previously. Ryots from a distance will seldom bring an infant under 12 months of age, and those with a family will bring several children together, hence in some years the number of children from the district is small. It is evident that the common inducement, viz. prevalence of small-pox, can have had little influence, inasmuch as that disease was happily rare in and around Sattara during the year in question. Except in the months of August and September the vesicles and lymph have been noted as "good," in those months as "fairly good;" the former being rather small. Latterly I have seen very good vesicles, and in conclusion consider that the efficiency of this small establishment continues to be good.

SHOLAPOOR.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon C. F. Ogilvie, M.D.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of success.
		Increase.	Decrease.		
1865	1,969	..	..	1,532	77·8
1866	2,241	272	..	1,753	78·2

During the past year, the number of persons vaccinated was 2,241, of these 1,140 were males, and 1,101 were females; 832 were children under one year, and 1,409 were above that age; 1,753 were succesful, 238 doubtful, and 250 were unsuccessful. I regret to state, that although I have taken great interest in the work during a residence of nearly five years at this station, the successful operations amount only to 78·2 per-cent., and including those returned as doubtful, only to about 89 per-

cent. There is, however, a slight increase in the percentage of success this year as compared with the previous one. The fault is not to be attributed to the lymph, as every operation I have personally performed has been successful. It may be in the want of care in selecting the subjects for the operation; but a very great deal in my opinion depends upon the apathy manifested by the parents. They seem yet not to appreciate the blessings of this almost certain preventive against small-pox. Were it otherwise, the number of operations upon children under one year would be many more than at present; but I hope if I am here another year, to be able to report upon this work more favourably than I have hitherto been able to do.

DHOOLIA.

One Vaccinator under the Civil Surgeon,

Assistant Surgeon W. E. Cates.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	819	..	..	763	93·1
1866	792	..	27	694	87·6

Of the 792 persons vaccinated during the year 1866, 416 were males and 376 females, 638 were under 1 year, and 154 above that age, 694 were successful cases, 52 unsuccessful, and 46 doubtful. These numbers show a decrease, as compared with the previous year both in the number vaccinated and in the percentage of success, but not to any great extent. I have found considerable difficulty in persuading parents to bring their children for vaccination, and still greater difficulty with regard to their bringing them for inspection after vaccination, especially in the case of those not residing in the town itself. The native civil authorities are very lukewarm as a general rule in the cause.

The lymph has been usually of good quality, the vesicles in all cases returned as successful have been characteristic, and the percentage of successful vaccinations would, I think, have been large, had all the children been brought for subsequent inspection, a large number of the cases returned as doubtful having been those which were not seen again after vaccination.

NASSICK.

One Vaccinator under Sub-Assistant Surgeon A. SUMMERS.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	756	..	..	602	79·6
1866	763	7	..	621	81·4

I have to report upon the result of vaccination performed at the Civil Hospital and in the Town of Nassick for the past year in a more favourable manner than the preceding. Out of the 763 cases operated upon 621 were successful, twenty-one by the monthly returns were unsuccessful, some of these were re-vaccinated successfully afterwards, 121 are shown in the return as doubtful cases, these being children whose parents, residing in the neighbouring villages, did not bring them after vaccination, owing to their disinclination to have the vaccine lymph taken from the successfully developed pustules.

BELGAUM.

One Vaccinator under the Civil Surgeon,
Surgeon Major G. G. W. MAITLAND.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	738	..	..	700	94·8
1866	612	..	126	595	97·2

The present annual return of persons vaccinated by the Government vaccinator in the town of Belgaum, as shown in the above table, exhibits a decrease of 126 compared with the preceding year. This result I do not consider attributable to any want of zeal on the part of the Government vaccinator, but from the fact, that during the period under review there have been two vaccinators at work in the town of

Belgaum, and that their joint labours raise the total of vaccinations to 1,335, an amount of vaccination much greater than has ever been performed in one year in this town, but still, less than might reasonably be expected among a population of 19,000. The Lyngayet portion of the community are still very averse to vaccination, particularly the weaver class. And as small-pox has now appeared in an epidemic form in their quarter of the town, the subject has been brought to the notice of the civil authorities.

Referring to the work performed by the Government vaccinator, the result is as follows: successfully vaccinated 595, unsuccessful 8, doubtful 9, percentage of success 97. He has also vaccinated 102 children living in the Cantonment Bazar and Fort, making a total of 714 persons during the year.

Until within the last month there has been no small-pox in the town, and I trust the measures now being taken will effectually arrest the epidemic and prevent a like occurrence for the future.

DHARWAR.

One Vaccinator under the Civil Surgeon,

Surgeon M. M. MACKENZIE (*Acting*).

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	548	..	..	461	84·1
1866	597	49	..	491	82·3

The above shows a satisfactory increase of 49 over that of the preceding year, and an increase of 30 successful over that for 1865. The greatest number vaccinated in any one month was 72 in March, then 67 in February and January 1865. The percentage successful has been 82·2, while for 1865 it was 84·1. Hindoos give 446 cases, 132 Mussulmans, and 19 Christians; 301 were males and 296 females. The vaccinator meets with little or no obstruction, but rather the reverse, in the carrying out of his duties. Vaccine matter has been sent to Carwar, Nusseerabad, Sevinoor and most of the Dharwar districts. It has been, in almost every case, of excellent quality, and held well. The vaccinator is a diligent, careful and trustworthy man, and seems to possess the confidence of the natives.

KOLAPOOR.

One Vaccinator under Sub-Assistant Surgeon WAMON WASSOODEO.

YEARS.	Total. Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	1,701	..	..	1,687	99·1
1866	1,674	..	27	1,662	99·3

During the past year the number of vaccinations performed by the station vaccinator in the City of Kolapoor and a few villages of the Petas of Kurveer, Punalla, and Sherole was 1,674, which is less than that of the year previous by 27, and less than the average of the five preceding years by 793. Of the total number vaccinated in the year under report 862 were males and 812 females; 425 were children under one year, and the remaining 1,249 were above that age. The percentage of the successful cases has been 99·3.

The monthly average number of vaccinations has been 139·5, but during the months of July, August, and September, when cholera prevailed in the city and neighbouring districts with considerable mortality, it was slightly decreased, being only 115. During the year a few isolated cases of small-pox occurred in the districts of Punalla, but the disease was never reported to have shown itself in the epedimic form.

The lymph in use has always been of good quality, and its supply has been kept up throughout the year.

Lymph was supplied as usual to the Camp and to some of the vaccinators serving under the Superintendent of Vaccination, S. C., when required. Dr. Day, Superintendent of Vaccination, Southern Circle, while at this station on his tour of inspection, vaccinated three or four children at the Civil Hospital with the lymph which he had just received from England, probably with a view to examine its quality. The new and fresh lymph thus obtained and introduced has been ordered to be kept up.

RUTNAGHERRY.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon C. JOHNSON.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	431	..	..	339	78·6
1866	273	..	158	217	79·5

The total number of children vaccinated during the year I regret to find is less by 122 than the number vaccinated during the previous year; this may be accounted for very much in the same way as in the report of the foregoing year, viz., from the fact that the town and neighbourhood of Rutnagherry has been comparatively free from small-pox compared with most years, and partly owing to the difficulty experienced by the vaccinator in obtaining help from the authorities. Shortly after I received charge of the duties of Civil Surgeon here, I wrote strongly on the subject to the Collector and Magistrate of the district, and I think matters in this particular are now improved. During the rains, great difficulty was experienced in keeping up a supply of lymph, owing at times to the lymph being of inferior quality, and again to there being a difficulty in getting children. The number vaccinated is less than last year; but taking all circumstances into consideration, and the difficulties experienced, it is, I think, fair.

VINGORLA.

Senior Apothecary S. HANSON.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	542	..	..	518	95·5
1866	119	..	423	104	87·4

The total number vaccinated during the year has been 119, while that for the preceding year was 542, showing a decrease of 423. The principal cause for this falling off is the lack of children to be operated on, which may be accounted for from the fact that an unusually large number were vaccinated during the past year, when small-pox visited this station. There is also another cause for the decrease, which is, that during the months of May, June and November last, vaccination was not kept up by the Hospital Assistants then in temporary medical charge of the Station. Of the 119 vaccinated 74 were male and 45 female children, 22 were under one year, and 97 above that age. The successful vaccinations have been 104 or 87·3 per cent. on the total number vaccinated. The lymph and vesicles were good.

No case of small-pox came under observation during the year.

AHMEDABAD.

Two Vaccinators under the Civil Surgeon,
Surgeon Major D. WYLLIE, M.D.
One Vaccinator (Government.)
One Vaccinator (Municipality.)

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	4,271	..	..	4,183	98·0
1866 { Civil 2,927 / Municipal 2,762 }	5,689	1,418	..	5,505	96·8

The very satisfactory increase above shown of 1,418 operations in the work of the year, as compared with results in 1865, is due to the circumstance of two vaccinators having been employed, whereas formerly the city vaccination was confided to a single subordinate.

In respect of sex, 3,003 males were operated on and 2,686 females. There has ever been a majority of males, but of late years this preponderance has been gradually lessening, and it is a hopeful sign as indicative of increasing solicitude for female offspring that in the present returns they show as high a percentage as 47·21 on the total vaccinations.

There were 3,485 operations under one year and 2,204 over that age. The difference has been in the same direction since 1859, but for the past two years it

has been somewhat less conspicuous, probably because there has since been a considerable immigration from the neighbouring Native States. As to results, the ratio of successful cases was 96·8, a lower figure than ordinary, but adequately accounted for in the fact that one of the vaccinators was new to the work, and that infantile sickness was prevalent during the autumnal months. The failures however only average 1·8 and that of doubtful cases 1·4, the latter altogether lost sight of, it being no uncommon thing for parents purposely to remove or conceal their children after operation to avoid thereby any chance of the prophylactic being propagated from them, there being some prejudice that removal of lymph impairs protective efficacy.

The lymph continued good throughout and the resulting vesicles were well-formed and typical, although somewhat smaller during the rains than in the other season. Supplies were repeatedly sent to neighbouring stations and dispensaries, as well as to troops on the line of march.

Small-pox was present in the city from January to July, but the cases were few compared with the previous year, and the deaths from this cause during the period were only 10. Inoculation has long since been put a stop to in this district, and as regards the city, vaccination is in no way obstructed, the community at large being so far sensible of the benefit extended as to accept it willingly when brought to their doors and at a time to suit their convenience. I have no suggestion to offer, the existing arrangements appearing to me adequate at present for the end in view. Both vaccinators have been industrious and attentive in discharging their duties as results, checked by weekly inspections, sufficiently prove.

KAIRA.

One Vaccinator under the Civil Surgeon,

Assistant Surgeon H. Cook, M. D. (*Acting.*)

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	577	..	..	592	85·3
1866	668	91	..	590	88·3

The total number of cases vaccinated during the year has been 668, showing an increase over the number in the preceding year of 91; of these, all but 75 have been under one year old; 387 were males, 281 females. With reference to caste, 564 were Hindoos, 73 Mussulmans, 2 Parsees, and 29 of other castes. The vaccinator's opera-

tions are not confined to the town of Kaira, as he works in two or three of the neighbouring villages. The total number of cases is very small when compared with the population of the town, but as they are nearly all among children under one year old, it will be seen that the operation is almost restricted to the recently born children. There is frequently considerable difficulty in finding out the recently born or unprotected children in a large town, as there does not seem to be any register of births available for the use of the vaccinator.

When here last year as Superintendent of Vaccination, I examined this vaccinator's work in the surrounding villages, and found that it had been satisfactorily performed by him, and that the children therein were well protected.

The lymph has been of average quality and the vesicles of normal size and development. The supply of lymph has been regular and continuous, and the number of unsuccessful operations have been small. The inhabitants of the town and country seem now tolerably well aware of the beneficial effects of vaccination, and all but the most careless willingly bring their children to the vaccinator or allow him to vaccinate them.

There has been no epidemic of small-pox for some considerable time, though occasional cases occur here and there at lengthened intervals. The inhabitants generally are too well protected, either by the disease itself or vaccination to allow the disease to become epidemic except through their own culpable neglect.

SURAT.

One Vaccinator under the Civil Surgeon,

Surgeon H. J. Gane (*Acting.*)

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	1,528	...	..	1,407	92·0
1866	1,967	439	..	1,535	78·0

During the past year 1,967 children have been vaccinated; of this number 369 were doubtful and 63 unsuccessful cases. This great increase goes far to prove that the Natives have no objection to have ther children vaccinated. The vaccinator, with the assistance of the Hospital peon, visits different parts of the city and induces the Natives to bring their children to the Civil Hospital for vaccination, There has been no epidemic of small-pox during the past year.

BROACH.

One Vaccinator under the Civil Surgeon,

Surgeon W. P. PARTRIDGE, (*Acting*).

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	1,003	....	....	927	92·4
1866	974	....	29	894	91·8

The number of persons vaccinated during the past year, is slightly less than that of the preceding year: but as it is only less by twenty-nine the difference is not of much improtance. I have myself of course had but little opportunity of seeing how the work is carried on.

Vaccination is practised continually in the city, and once a week the children, whose vesicles are mature, are brought to the Civil Hospital; at the same time many unvaccinated children attend, and are vaccinated at the Hospital. In all the cases which have come under my observation the vesicles have been well developed and the lymph of good quality.

During the year it has been found necessary to dismiss the vaccinator, owing to suspicion of neglecting his duty, taking bribes, and telling lies. A vaccinator has been appointed in his place, who had been formerly employed in this Hospital, but who had been dismissed in consequence of overstaying his leave. He is now giving every satisfaction as far as I can judge.

RAJCOTE.

One Vaccinator under the Civil Surgeon.

Assistant Surgeon C. JOYNT, M. D., (*Acting*).

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	496	..	...	439	88·5
1866	1,646	1,150	..	1,507	91·6

This return shows a very marked increase in the number vaccinated during the year, and also an increase in the number of successful cases.

The station vaccinator limits his operations to the town of Rajcote and to the station, but children have been brought into the town from about 10 adjacent villages. Formerly these villages were visited by the vaccinator, but the aid then afforded to him has since been withdrawn; a vaccinator is employed for the villages by a Native Chief, but, from what I have been able to gather, his operations are on a very small scale. Since I have had charge of the vaccination, I have inspected the children vaccinated in the town and station of Rajcote, and in no instance found a failure. The vesicles were remarkably good.

KURRACHEE.

One Vaccinator under the Civil Surgeon,

Surgeon J. Bean.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	3,114	..	..	2,800	89·9
1866	3,167	53	...	2,988	94·3

During the past year, the number of persons vaccinated by the station vaccinator, exclusive of convicts in the Jail and Sepoys and their familes in the Police Corps, amounted to 3,167, an increase of 53 over the number vaccinated in the preceding year; of these operations 2,988 proved successful, 76 failed altogether, and 103 were doubtful.

The ratio of successful cases amounted to 94·34 per-cent., a very large proportion being children under one year of age. The lymph has been kept up throughout the year, and the character of the pustules in the successful cases was very good.

HYDRABAD.

One Vaccinator under the Civil Surgeon,

Assistant Surgeon N. HOPKINS.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	1,478	...	..	1,205	81·5
1866	2,022	544	..	1,881	93·0

This year's report contrasts very favourably with the last two years' returns, being an increase on 1865 by 544, and on 1864 by 1,210; still the number is below what I hope it will be at the end of the current year. I have little to add to my last year's report, beyond that I have established regular days for vaccinating at Giddoo-ka-Tanda, where no vaccination had been done before; the number of inhabitants at Giddoo varies greatly at different seasons of the year,—indeed a few years ago it consisted only of a very few detached and wretched houses, but now it is a fast increasing village, and the inhabitants generally have no objection to have their children vaccinated. The vaccinator continues to give me every satisfaction; lymph has been frequently supplied to Hospital Assistants at out-stations and the Military authorities at Hydrabad.

SHIKAPOOR.

One Vaccinator under the Civil Surgeon,

Assistant Surgeon J. F. FFOLLIOTT.

YEARS.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	1,379	..	..	1,323	95·9
1866	1,435	56	..	1,377	95·9

The total number vaccinated during the past year has amounted to 1,435, being an increase of 56 as compared with the preceding year; 32 individuals over one year old have been vaccinated, and the total number of unsuccessful and doubtful cases has been 58 only.

The quality of the lymph continues satisfactory, and supplies have as usual been furnished to the Civil Hospital at Jacobabad and the Establishment of the Superintendent of Vaccination working in the Shikarpoor districts.

Measles was very prevalent throughout the spring and early summer months, and caused great mortality in consequence of the treatment adopted by the natives, who consider it a description of variola, and call it "Chota Indi," but no case of small-pox has occurred during the year under report in the town or neighbourhood of Shikarpoor.

KOTREE.

One Vaccinator (Municipality's) under the Civil Surgeon,

Assistant Surgeon W. H. Colvill.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	844	..	..	667	79·0
1866	654	..	190	548	83 8

654 persons have been vaccinated during the past year, a decrease therefore of 190. This is probably attributable to the fact that the vaccinator engaged during the first quarter of the year, and afterwards dismissed, showed himself very indolent; 345 when vaccinated were under one year and 309 above that age. The lymph was tolerably good during the year.

KUTCH.

Mr. Sorabjee Hormusjee, G.G.M.C.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	606	..	..	532	87·8
1866	1,139	533	..	944	82·9

Since January 1866 I was put in charge of the Bhooj Dispensary; I took up the task of vaccination myself, and conducted it throughout the whole year, with the exception of the rainy months, when the lymph had failed. I conducted the operation by a new instrument, and the pustules observed were three or four times bigger than the vesicles ordinarily observed under the point of a lancet. Three vaccinators were engaged by His Highness the Rao of Kutch, and they went round vaccinating in different parts of Kutch, not however without great opposition from the people. 1,139 persons were vaccinated throughout the province, being in excess of the last year by 533. Lymph had failed in the rainy season both in Bhooj and the surrounding districts, but since November last vaccination was again conducted from a fresh supply, first at Bhooj and thence in different parts.

ADEN.

One Vaccinator under the Civil Surgeon,

Surgeon R. W. James, M.D.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Per-centage of Success.
		Increase.	Decrease.		
1865	323	....	....	180	55·7
1866	799	476	....	610	76·3

The result of vaccination at this station during the past year has been highly satisfactory, for the returns show 799 persons vaccinated, out of which number 610

or 76·34 per cent. proved successful. This great increase is however partly attributable to a large number of slaves brought to this station by Her Majesty's Ship "Highflyer" during September and October, and as small-pox had broken out amongst them, every means, and vaccination was one, were taken to check the spread of the disease amongst these poor beings.

The lymph employed has I understand been obtained direct from England, on points in hermetically sealed tubes and between glasses. Drs. Steinhaenser and Pitman in their monthly Reports from March to August, when I assumed medical charge, report the lymph as "very good" and "good," and I must say I have every reason, judging from the results, to endorse their opinion. During the months of January and February, though 50 persons were operated on, not a single case was successful; but the lymph then used was the same that had been obtained from Bombay and must have become deteriorated, and rendered inert in transit.

Aden seems never to be free from small-pox; except August, not a single month shows a clean Bill of health from this disease, but all these outbreaks can clearly be traced to importation, so that we can scarcely look upon this disease as endemic in Aden.

The greatest number of admissions from small-pox occurred during the months of October and November, shortly after the arrival of the "Highflyer," with the slaves, and the disease seemed to be confined to them, a few cases however occurred in some of the town people, but they happened to come in direct contact with the disease.

APPENDIX.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOC.

07.

TABLE

VACCINATION UNDER SUPERIN

Table showing the Number and Names of the Circles, and their Superintendents, the those of last Year, the Total Number arranged according to Sex, Caste, the Average Number of Operations performed

Number.	CIRCLES.	Names of the MEDICAL OFFICERS Superintendents of Vaccination.	Number of Native Vaccinators attached.	Total Number Vaccinated.	Compared with last year..		
					1865.	Increase.	Decrease.
1	CENTRAL	Assistant Surgeon P.S. Turnbull M.D.....	36 *1	61,543 213	63,251	.. 213	1,708 ..
2	SOUTHERN	Assisstant Surgeon H. Day, M.D.	29 *10	46,948 7,229	41,986 5,052	.. 2,177	1,038 ..
3	NORTHERN	Surgeon R. Dick, M.D. ..... Assistant Surgeon H. Cook M.D. (Acting) .... Dr. Muncherjee Beramjee Colah, (Acting).	33 *1	69,085 57	70,212 160	.. ..	1,127 103
4	SIND	Assistant Surgeon J. Pinkerton, M.D.	17 †13	44,123 23,594	50,521 11,891	.. 11,703	6,398 ..
5	KATTIAWAR. ..	Surgeon E. R. Butler, M. D..... Assistant Surgeon C. Joynt, M.D. (Acting)	8	6,563	6.940	..	377
6	REWA KANTA ..	Assistant Surgeon W. Fleming ..... Assistant Surgeon J. T. Welsh, M.D. (Acting)..	5	5,833	3,337	2,496	..
7	PRESIDENCY	Sub-Assistant Surgeon Anunta Chundroba	6	8,866	7,829	1,037	..
		Total....	159	268,057	261,182	6,875	..

* Municipal Vaccination.

No. I.

TENDENTS IN BRITISH TERRITORY.

Number of Vaccinators employed; the Total Vaccinations performed and compared with Age, and Result; the Ratio of Successful to Total Vaccinated; and by each Vaccinator for the year 1866.

Total Number Vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Average Number of persons Vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful	Doubtful.		
32,211	29,332	54,139	2,779	1,096	..	3,529	15,340	46,203	57,847	1,798	1,898	94·0	1,710
130	83	165	48	..	..	..	67	146	190	12	11	89·2	213
21,813	19,135	36,221	1,904	487	..	2,336	6,829	34,119	38,961	993	994	95·1	1,412
3,875	3,354	6,534	571	1	2	110	2,778	4,451	6,655	326	248	92·1	723
36,786	32,299	58,563	5,255	29	133	5,105	41,694	27,391	65,463	1,184	2,438	94·8	2,093
28	29	56	1	..	..	..	51	6	46	3	8	80·7	57
24,629	19,497	4,701	35,515	6	..	3,904	10,298	33,828	40,970	491	2,665	92·8	2,596
13,105	10,489	2,213	20,49[illegible]	..	..	883	5,129	18,465	21,300	640	1,654	90·3	1,815
3,448	3,115	6,002	502	..	..	59	3,100	3,463	6,417	94	52	97·8	829
3,071	2,762	5,023	636	..	..	174	3,633	2,200	5,236	388	149	90·8	1,167
5,003	3,863	5,399	1,461	1,185	619	202	3,596	5,270	6,669	896	1,301	75·2	1,478
144,099	123,958	179016	69,170	2,815	754	16,302	92,515	175,542	249,814	6,825	11,418	93·2	1,686

† Local Vaccination.

TABLE

VACCINATION UNDER SUPERINTENDENTS

Table of Vaccination through the Agency of Native Chiefs arranged according to for the

Numbers.	Circles and Stations.	Medical Officers.	Number of Native Vaccinators attached.	Total number vaccinated.	Compared with last year.		
					1865	Increase.	Decrease.
1	CENTRAL	Assistant Surgeon P. S. Turnbull, M.D	2	953	1,915	..	962
2	SOUTHERN	" H. Day, M.D.	25	18,019	17,142	877	..
3	NORTHERN	Surgeon R. Dick, M.D	11	22,043	20,118	1,925	..
		Assistant Surgeon H. Cook, M.D. (Acting)					
		Dr. Muncherjee Beramjee Colah, (Acting)					
4	SIND	Assistant Surgeon J. Pinkerton M.D	1	975	816	159	..
5	KATTIAWAR ..	Surgeon E.R. Butler, M.D.	30	26,759	20,079	6,680	..
		Assistant Surgeon C. Joint, M.D. (Acting)....					
6	REWA KANTA ..	" W. Fleming	5	4,855	3,994	861	..
		" J. T. Welsh, M.D. (Actiug) ..					
7	BHOOJ	Mr. Sorabjee Hormusjee, G.G.M.C.....	3	1,139	606	533	..
		Total....	7	74,743	64,670	10,073	..

No. II.

AND OTHERS IN NATIVE TERRITORY.

the Circles of Vaccination and Stations, and showing Details as in Table No. I., year 1866.

Total number Vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of successful to Number vaccinated.	Average Number of persons vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
581	372	917	9	..	..	27	341	612	786	72	95	82·	476
9,514	8,505	16,639	786	180	1	413	4,745	13,274	17,066	590	363	94·7	721
11,718	10,325	18,552	1,541	..	1	1,949	11,750	10,293	19,986	1,067	990	90·7	2,004
541	434	337	607	..	..	31	274	701	20	109	46	84·1	975
14,571	12,188	22,828	3,068	..	..	263	11,089	15,670	24,878	1,163	718	93·0	892
2,529	2,326	4,466	282	..	4	103	2,394	2,461	4,741	51	63	97·6	971
601	538	567	569	..	3	..	183	956	944	159	36	82·9	380
40,055	34,688	64,306	7,462	180	9	2,786	30,776	43,967	69,221	3,211	2,311	92·5	971

VACCINATION UNDER CIVIL

Table of Vaccination under Civil Surgeons and others arranged according

Number.	Division of Deputy Inspectors General of Hospitals.	Civil Station.	Number of Native Vaccinators attached.	Total Number Vaccinated.	Compared with last year.			Sex.	
					1865.	Increase.	Decrease.	Males.	Females.
1	Presidency	Tanna*	1	202	109	93	..	137	65
		Alibaug	..	226	9	217	..	143	83
		Bandora	..	98	86	12	..	63	35
		Coorla	..	69	68	1	..	42	27
		Oorun	..	58	271	..	213	37	21
		Cullian	..	63	....	63	..	40	23
		Total	1	716	543	173	..	462	254
2	Poona	Poona	1	1,699	1,537	162	..	1,086	61
			* 2	1,389	....	1,389	..	953	436
		Ahmednuggur*	1	1,080	1,480	166	..	616	464
			1	596				377	189
		Sattara	1	1,611	914	697	..	875	736
		Sholapoor	1	2,241	1,969	272	..	1,140	1,101
		Dhoolia	1	792	819	..	27	416	376
		Nassick	1	763	756	7	..	414	349
		Total	9	10,141	7,475	2,666	..	5,877	4,264
3	Northern	Ahmedabad	1	2,927	4,271	1,418	..	1,570	1,357
			* 1	2,762				1,433	1,329
		Kaira	1	668	577	91	..	387	281
		Surat	1	1,967	1,528	439	..	1,173	794
		Broach	1	974	1,093	..	29	531	443
		Rajcot	1	1,646	496	1,150	..	938	708
		Dholka*	1	513	....	513	..	289	224
		Veerumgaum*	1	495	....	495	..	252	243
		Total	8	11,952	7,875	4,077	..	6,573	5,379
4	Southern	Belgaum	1	612	738	..	126	317	295
		Dharwar	1	597	548	49	..	301	296
		Kolapoor	1	1,674	1,701	..	27	862	812
		Rutnagherry	1	273	431	..	158	169	104
		Vingoorla	..	119	542	..	423	74	45
		Honore (Dispensary)	..	192	222	..	30	107	85
		Hooblee (Dispensary)	..	....	1,115	..	1,115	....	....
		Dispensary (Belgaum)	..	....	339	..	339	....	....
		Total	4	3,467	5,636	..	2,169	1,830	1,637
5	Sind	Kurrachee	1	3,167	3,114	53	..	2,012	1,155
		Hydrabad	1	2,022	1,478	544	..	1,150	872
		Shikarpoor	1	1,435	1,379	56	..	640	795
		Kotree*	1	654	844	..	190	441	213
		Dispensary	..	2,344	3,471	..	1,127	1,382	962
		Total	4	9,622	10,286	..	664	5,625	3,997
6	Aden	Aden	1	799	323	476	..	635	164
		Bushire	..	....	188	..	188	....	....
		Total	1	799	511	288	..	635	164
		Grand Total	27	36,697	32,326	4,371	..	21,002	15,695

* Municipal

SURGEONS AND OTHERS.

to Divisions, and showing the Details as in Table No. 1, for the year 1866.

Total Number Vaccinated, arranged according to											
Caste.					Age.		Results.			Ratio per cent. of Successful to Number Vaccinated.	Number of Persons Vaccinated by each Vaccinator.
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under One Year.	Above One Year.	uccessful.	Unsuccessful.	Doubtful.		
151	24	26	1	....	58	144	195	7	....	96·5	202
189	2	1	..	34	68	158	212	7	7	93·8	....
46	31	21	..	....	9	89	55	27	16	56·1	....
23	7	37	2	....	32	37	39	13	17	56·5	....
38	16	2	2	....	19	39	40	6	12	69·0	....
23	15	4	15	6	37	26	52	4	7	82·5	....
470	95	91	20	40	223	493	593	64	59	82·8	202
1,371	287	35	6	....	600	1,099	1,378	136	185	81·1	1,699
1,244	136	8	1	....	797	592	1,090	228	71	78·5	694
938	114	25	3	....	520	560	940	76	64	87·0	1,080
465	91	9	..	1	324	242	491	44	31	86·7	566
1,454	67	17	1	72	736	875	1,533	17	58	95·3	1,611
942	852	2	..	445	832	1,409	1,753	250	238	78·2	2,241
590	124	8	..	70	638	154	694	52	46	87·6	792
630	38	28	..	67	441	322	621	21	121	81·4	763
7,634	1,709	132	11	655	4,888	5,253	8,503	824	814	83·8	1,127
2,609	229	4	4	....	1,876	1,051	2,846	37	44	97·2	2,927
2,048	686	12	15	1	1,609	1,153	2,659	68	35	96·3	2,762
564	73	..	2	29	593	75	590	28	50	88·3	668
1,065	180	16	49	57	787	1,189	1,535	63	369	78·0	1,967
756	165	3	50	....	468	506	894	18	62	91·8	974
1,242	345	5	5	49	648	998	1,597	89	50	91·6	1,646
318	184	..	..	11	352	161	502	10	1	97·8	513
336	99	..	..	....	267	228	481	11	3	97·2	495
9,638	1,952	40	125	147	6,600	5,352	11,014	324	614	92·2	1,494
485	123	4	..	....	248	364	595	8	9	97·2	612
446	132	19	..	....	195	402	491	99	7	82·3	597
1,640	34	..	..	....	425	1,249	1,662	12	....	99·3	1,674
259	14	..	..	....	92	181	217	30	26	79·5	273
106	6	7	..	....	22	97	104	5	10	87·4	....
193	2	52	..	5	26	166	164	19	9	85·4	....
....	....	..	..	....	....	....	....	....	....	....	....
....	....	..	..	....	....	....	....	....	....	....	....
3,060	311	82	..	5	1,008	2,459	3,233	173	61	93·2	814
677	2,312	104	12	62	1,454	1,713	2,988	76	103	94·3	3,167
803	1,133	32	..	64	1,283	739	1,881	92	49	93·0	2,022
897	510	1	..	27	1,403	32	1,377	35	23	95·9	1,435
160	453	13	..	28	345	309	548	79	27	83·8	654
1,108	1,215	2	3	16	1,141	1,203	2,153	128	63	91·9	....
3,645	5,613	152	15	197	5,626	3,996	8,947	410	265	93·0	1,820
38	69	16	..	685	59	740	610	189	....	76·3	799
....	....	..	..	....	....	....	....	....	....	....	....
38	69	16	..	685	59	740	610	189	....	76·3	799
24,544	9,740	513	171	1,729	18,404	18,293	32,900	1,984	1,813	89·7	1,299

TABLE

General Abstract of Vaccination

Designation of Tables.	Total Number Vaccinated.	Compared with last year.			Sex.	
		1865.	Increase.	Decrease.	Males.	Females.
No. 1 Vaccination under Superintendents in British Territory by Government Establishment.....	236,964	244,079	....	7,115	126,961	110,003
Do. do. Local and Municipal Do.	31,093	17,103	13,990	....	17,138	13,955
No. 2 ditto ditto and others in Native Territory..	74,743	64,670	10,063	....	40,055	34,688
No. 3 ditto under Civil Surgeons, &c.*	36,697	32,326	4,371	....	21,002	15,695
Totals....	379,497	358,178	21,319	....	205,156	174,341

Seven Municipal Vaccinators.

No. IV.

FOR THE YEAR 1866.

Total Number Vaccinated, arranged according to										Ratio per cent. of successful to number vaccinated.
Caste.					Age.		Result.			
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes	Under One year.	Above One year.	Successful.	Unsuccessful.	Doubtful.	
170,048	48,052	2,803	752	15,339	84,490	152,474	221,623	5,844	9,497	93·5
8,968	21,146	12	9	992	8,025	23,068	28,191	981	1,921	90·7
64,306	7,462	180	9	2,786	30,776	43,967	69,221	3,211	2,311	92·5
24,544	9,749	513	171	1,720	18,404	18,293	32,900	1,984	1,813	89·7
267,866	86,379	3,508	934	20,817	141,695	237,802	351,935	12,020	15,542	92·7

work is shown under this.

TABLE No. V.

Table of Ages.

Vaccination in 1866, *arranged according to Ages, whether performed under or above One Year of Age.*

Establishments, &c.	Age.		Difference.		Total Vaccinated.
	Under one Year.	Above one Year.	Under.	Above.	
I.—Superintendents in British Territory	92,515	175,542	....	83,027	268,057
II.— Ditto and others in Native do	30,776	43,967	....	13,191	74,743
III.—Civil Surgeons and others	18,404	18,293	111	....	36,697
Total	141,695	237,802	....	96,107	3,79,497
I.—*Superintendents in British Territory.*					
Central Circle	15,407	46,349	....	30,942	61,756
Southern do.	9,697	38,570	....	28,963	48,177
Northern do.	41,745	27,397	14,348	....	69,142
Sind do.	15,247	52,293	....	36,866	67,720
Kattywar do.	3,100	3,463	....	363	6,563
Rewa Kanta do.	3,633	2,200	1,433	....	5,833
Presidency do.	3,596	5,270	....	1,674	8,866
II.—*Superintendents and others in Native Territory.*					
Central Circle	341	612	....	271	953
Southern do.	4,745	13,274	....	8,529	18,019
Northern do.	11,759	19,293	1,457	....	22,043
Sind do.	274	701	....	427	975
Kattywar do.	11,089	15,670	....	4,581	26,759
Rewa Kanta do.	2,394	2,461	....	67	4,855
Bhooj do.	183	956	....	773	1,139
III.—*Civil Surgeons and others.*					
Tanna	58	144	....	86	202
Alibaugh	68	158	....	90	226
Bandora	9	89	....	80	98
Coorla	32	37	....	5	69
Oorun	19	39	....	20	58
Callian	37	26	11	....	63
Poona	1,397	1,691	....	294	3,088
Ahmednuggur	844	802	42	....	1,646
Sattara	736	875	....	2,139	1,611
Sholapoor	832	1,409	....	577	2,241
Dhoolia	638	154	484	....	792
Nassick	441	322	119	....	763
Ahmedabad	3,485	2,204	1,281	....	5,689
Kaira	593	75	518	....	668
Surat	787	1,180	....	393	1,967
Broach	498	596	....	38	974
Rajcote	648	998	....	350	1,646
Dholka	352	161	191	....	513
Veerumgaum	267	228	39	....	495
Belgaum	248	364	....	116	612
Dharwar	195	402	....	207	597
Kolapoor	425	1,249	....	824	1,674
Rutnagherry	92	181	....	89	273
Vingorla	22	97	....	75	119
Honore (Dispensary)	26	166	....	140	192
Kurrachee	1,454	1,713	....	259	3,167
Hydrabad	1,283	739	544	....	2,022
Shikarpoor	1,403	32	1,371	....	1,435
Kotree	345	309	36	....	654
Dispensaries	1,141	1,203	....	62	2,344
Aden	59	740	....	681	799

TABLE No. VI.

EMPLOYMENT RETURN OF SUPERINTENDENTS OF VACCINATION FOR THE YEAR 1866.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	10	167	19	1,750	41 Villages visited and inspected.
February	8	158	20	4,492	60 do. do.
March	18	237	19	1,885	45 do. do.
April	1	14	1	....	From April to December Dr. Turnbull was stationary, acting as Civil Surgeon at Ahmednuggur.
May	....	....	....	....	
June	....	....	....	....	
July	....	....	....	....	
August	....	....	....	....	
September ..	....	....	....	....	
October	....	....	....	....	
November ..	....	....	....	....	
December ..	2	42	5	353	7 Villages visited and inspected.
Total ..	39	618	64	8,399	

NORTHERN CIRCLE.

Superintendents.—
- Assistant Surgeon R. DICK, M.D. (*Absent in Europe*).
- " " H. COOK, M.D., (*Acting*).
- MR. MUNCHERJEE BERAMJEE COLAH, M.D. (*Acting*).

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	19	149	16	738	15 Villages visited and inspected.
February	26	436	17	991	21 do. do.
March	34	166	19	876	31 do. do.
April	27	140	18	1,280	24 do. do.
May	26	131	18	1,293	21 do. Entered quarters for monsoon on 5th June.
June	3	103	3	100	1 do.
July	....	....	....	....	
August	....	....	....	....	
September ..	....	....	....	....	
October	....	....	....	....	
November ..	15	97	6	770	14 Villages visited and inspected. Dr. Muncherjee joined.
December ..	41	407	24	1,414	36 do.
Total ..	191	1,629	121	7,462	

SOUTHERN CIRCLE.

Superintendents.— { Assistant Surgeon F. H. PLUMPTRE (*absent in Europe.*)
" " H. DAY, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	5	67	5	44	2 Villages visited and inspected.
February	12	148	13	308	6 do. do.
March	....	....	....	....	
April	2	103	9	122	3 do. do. } Dr. Day joined on the 17th April.
May	20	273	21	335	8 do. do. }
June.....	....	....	....	....	
July	4	37	4	80	1 do. do.
August.....	3	37	2	42	2 do. do.
September ..	....	....	....	....	
October	8	205	15	392	15 do. do.
November ..	10	205	15	210	11 do. do.
December ..	14	262	14	524	15 do. do.
Total....	60	1,337	98	2,057	

SIND CIRCLE.

Superintendent.—Assistant Surgeon J. PINKERTON, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	10	123	18	1,978	63 Villages visited and inspected.
February....	11	120	20	2,002	94 do. do.
March	7	106	9	448	47 do. do.
April.....	5	314	7	128	5 do. do.
May	7	154	8	445	30 do. do.
June.....	3	44	7	295	18 do. do.
July	4	36	4	70	8 do. do.
August.....	....	....	....	....	
September ..	7	133	11	330	17 do. do.
October	5	48	7	274	24 do. do.
November ..	8	86	11	649	30 do. do.
December ..	10	118	20	2,704	51 do. do.
Total..	77	1,286	122	9,323	

KATTIAWAR CIRCLE.

Superintendents.— Surgeon E. R. BUTLER, M.D. (*Absent in Europe.*)
Assistant Surgeon E. P. BURROWES.
" " J. WILLIAMS, M.D.
" " H. T. DANN.
" " C. JOYNT, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	20	267	27	1,468	25 Villages visited and inspected.
February	4.	105	11	870	15 do. do.
March	15	280	26	2,019	37 do. do.
April	14	266	24	456	17 do. do.
May	5	165	12	697	
June	....	....	....	....	
July	....	....	....	....	
August.....	....	....	....	....	Dr. Butler left Rajcote for Europe on medical certificate in August 1866, since which time there has been no active supervision.
September ..	....	....	....	....	
October	....	....	....	....	
November ..	....	....	....	....	
December ..	....	....	....	....	
Total..	58	1,083	100	5,510	

REWA KANTA CIRCLE.

Superintendents.— Assistant Surgeon W. FLEMING, (*Absent in Europe.*)
" " J. T. WELSH, M.D., (*Acting.*)

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	....	....	....	....	In medical charge of the Gujerat Bheel Corps and Dohud Jail.
February	....	....	....	....	
March	....	....	....	....	
April	....	....	....	....	
May.....	....	....	....	....	
June	....	....	....	....	
July	....	....	....	....	
August.....	....	....	....	....	
September ..	2	46	2	877	12 Villages visited and inspected.
October	3	31½	3	1,820	41 do. do.
November ..	6	64½	6	1,034	24 do. do.
December ..	2	97	9	626	12 do. do.
Total..	13	239	20	4,357	

No. 986.

GENERAL DEPARTMENT.

Bombay Castle, 27th May 1867.

Letter from the Inspector General, Indian Medical Department, No. 1465, dated 3rd May 1867, submitting his Annual Report on Vaccination in the Bombay Presidency, including Sind, for 1866.

RESOLUTION.—The number of vaccinations performed throughout the Presidency and Sind, exclusive of those in Military cantonments, amounted during the year to 379,497, showing an increase of 21,319 over the preceding year. The particulars of this increase are given in the subjoined table—

Number vaccinated in 1866.... 379,497
Number vaccinated in 1865.... 358,178
Increase..... 21,319

Number of Vaccinations.	In 1866.	In 1865.	Increase.	Decrease.
Under Superintendents in British Territory by Government Establishment	236,964	244,079	....	* 7,115
Under Local and Municipal Establishments..	31,093	17,103	13,990	....
In Native Territory.....	74,743	64,670	10,073	....
Under Civil Surgeons, &c.....	36,697	32,326	4,371	....
	379,497	358,178	28,434	7,115
Decrease.....	....	....	7,115	....
Net Increase.....	....	....	21,319	....

2. Out of the total vaccinations performed during the year, 351,935, or about 93 per cent., are returned as successful operations. About 37 per cent. of the operations were performed on infants of below one year of age, being a small increase over the number operated upon during the preceding year. The relative proportion of males to females vaccinated is shown to be much the same as in former years. The number of either sex vaccinated during the year is as per margin.

Males.....205,156
Females.....174,341
379,497

3. Government notice with satisfaction that the practice of falsification of returns is diminishing under the strict check exercised by the Superintendents. The importance of obtaining correct and trust-

Vide Government Resolution No. 535, dated 10th May 1867 (Financial Department).

worthy returns cannot be overrated, and Government trust that the subject will always be kept in prominent view by the Superintendents of Vaccination. Measures have recently been taken to ensure this information being accurately and punctually furnished by the several village Officers.

4. The facts stated by Dr. Arnott in paragraphs 15 to 17 of his report regarding infantile vaccination are encouraging. In some parts the percentage has risen higher than during the preceding season. In the city of Shikarpoor the rate was 98 per cent., the highest rate ever before recorded; for which satisfactory result great credit is due to Dr. Ffolliott, the Civil Surgeon of that place.

5. It is to be regretted, however, that in the Town and Island of Bombay infantile vaccination is not progressing so satisfactorily as could be wished. The number of children vaccinated under one year of age amounted to 40½ per cent. only during the year.

6. Government also regret to observe the increase in deaths from small-pox in Bombay, the casualties being nearly double those in the preceding year. Dr. Arnott should be particularly requested to give his best and early consideration to the subject.

7. The question as to the advisability or otherwise of making inoculation penal, is now engaging the attention of Government.

8. The Secretary of State will be requested to forward an increased supply of lymph, and that in tubes only, as requested in paragraph 21 of the report.

9. The Right Honorable the Governor in Council has much pleasure in recording his sense of the praiseworthy exertions of the Native Chiefs and of the several Municipalities noticed by Dr. Arnott.

10. The services of the Superintendents, especially of Dr. Ffolliot, and the assistance rendered by the other Officers of Government, also deserve the acknowledgments of Government.

(Signed) H. E. JACOMB,

For Acting Chief Secretary to Government.

To

The Inspector General, Indian Medical Department.

BOMBAY: PRINTED AT THE EDUCATION SOCIETY'S PRESS, BYCULLA.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1867.

Bombay:
PRINTED FOR GOVERNMENT AT THE
EDUCATION SOCIETY'S PRESS, BYCULLA.

1868.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1867.

No. 1406 OF 1868.

Bombay, 27th April 1868.

From the INSPECTOR GENERAL, Indian Medical Department,

To the CHIEF SECRETARY to GOVERNMENT, General Department.

SIR,—I have the honour to forward the Report on Vaccination, performed in the Presidency of Bombay, for the year 1867, for submission to His Excellency the Governor in Council. The Report consists of a general review of the working of the Department and the presence of Small-pox and Inoculation throughout the Presidency, of the Reports, or extracts from Reports, of Superintendents and others under whom Vaccination has been carried on, and of the results in general, shown in comparative tables.

2. There have been no changes in the working establishments during the year under report, and the system has continued to work as satisfactorily as usual.

Changes.

3. In the Central Circle Assistant Surgeon Turnbull, who has been Superintendent since 1864, carried on his supervision with energy and ability until September 1867, when his services were required for military duty in Abyssinia; the work of the office then fell to the Civil Surgeon at Ahmednuggur, and subsequently to Assistant Surgeon Langley at Poona. Neither of these officers, holding stationary appointments, were able to superintend any work beyond the neighbourhood of their stations.

Superintendence.

4. In the Southern Circle Surgeon Day superintended the work until November 1867, when his services were placed at the disposal of His

Excellency the Commander-in-Chief for employment in Abyssinia. The Regiment to which he was appointed did not proceed during the year, but, being under orders, his active superintendence ceased with his appointment to military duty.

5. In Sind Surgeon Pinkerton, who has been Superintendent since 1863, was required in March to take up temporarily the duties of Civil Surgeon at Kotree. This did not, however, much interfere with his superintendence in the province, as the interruption was not of long duration.

6. In the Northern Circle nothing interfered to arrest the progress of superintendence throughout the year.

7. In the Western Circle, as mentioned in previous Reports, the supervision was divided between the Central and Southern Circles, and was almost ineffective throughout the year. The appointment was given, in 1865, to Assistant Surgeon Blanc while in Abyssinia, but since his nomination to it the superintendence has not been of an active character, as Doctors Day and Turnbull have had as much or more than they could attend to in traversing their own Circles. The Western Circle has a long tract of sea-coast, dotted with numerous ports, and it is undoubtedly important that, as soon as medical officers are available, there should be a Superintendent working in its districts. Situated in this Circle, in the Southern Concan, is the territory of the "Hubshee" to which I alluded in my last Report, and which I again mention as there is no vaccination carried on in it; and it is close to Bombay, with which city there is constant intercourse. Small-pox is known to be frequent in Hubshan.

8. In the Northern Concan is a Native State named "Jowar", the Raja of which, I am glad to state, has desired that a Vaccinator may be sent to him.

9. In the Rewa Kanta and Punch Mahals the supervision extends over only four months of each year: it was complete for that time.

10. In Kattiawar it was incomplete. Assistant Surgeon Blomfield carried it on with activity for four months.

11. At the Presidency itself the superintendence by the Local Superintendent was unbroken.

Remarks on the superintendence.

12. It will be observed from the above that the vaccination superintendence has not been so active and close as could be desired. As this is the essential part of a system, which has proved itself to be the best suited to the requirements of the country, it is to be regretted that it should ever be weak-

ened in consequence of the emergencies of the general service. Being fully convinced of the positive good done by Superintendents, and the necessity there always is for active and unbroken supervision, I cannot but hope that in future no need will exist for withdrawing these officers from their duties.

Circles of vaccination.

13. The Circles of Vaccination throughout the Presidency at the end of the year, with their Superintendents, were as follows :—

Central	Circle.—	Assistant Surgeon Turnbull, M.D., on military duty. Assistant Surgeon Langley, A.B., officiating.
Southern	,,	Surgeon Day, M.D., on military duty. Surgeon Major Pitman, to officiate.
Sind	,,	Surgeon Pinkerton, M.D.
Northern	,,	M. B. Colah, M.D. (Uncovenanted), Acting Superintendent.
Western	,,	Assistant Surgeon Blanc, M.D., prisoner in Abyssinia (Superintendents Central and Southern Circles, Acting).
Rewa Kanta	,,	Assistant Surgeon Welsh, M.D.
Kattiawar.	,,	Surgeon Butler, M.D., returned from England, from medical certificate, December 1867.

14. The standing of the Superintendents in the Vaccination Department is as follows :—

Surgeon Pinkerton, appointed in	1863.
Sugeon Butler, whose primary appointment is Civil Surgeon, Rajcote	1862.
Assistant Surgeon Turnbull	1864.
Assistant Surgeon Blanc.....	1865.
Surgeon Day.....	1866.
Assistant Surgeon Welsh	1865.
Acting (Uncovenanted) M.B. Colah, M.D. ..	1866.

Number Vaccinated.

15. Exclusive of vaccination performed in military cantonments the total number operated on during the year amounted to 391,415, being an increase over the previous year of 11,918. This must be deemed most satisfactory; for if the vaccination of the Bombay Presidency is practised in a population of about sixteen millions, it may be computed that the births annually may average four hundred and eighty thousand. If, however, of these one-seventh die before the period when vaccination is performed, there will

remain about four hundred and ten thousand to be vaccinated ; so that if the present rate was continued there would probably not be more than twenty thousand who year by year would go unvaccinated in this Presidency. It is true that the number has only gradually risen to the amount shown, so that a considerable number are arrears from former years ; nevertheless, there can be no doubt the general results are most satisfactory, and would be more so could the actual state of population be ascertained, and more Vaccinators employed where shown to be required.

Cost of vaccination.

16. As far as can be ascertained, the average cost of each successful vaccination to Government, in Government Circles, is five annas and seven pies ; increased vaccination will bring this down still further, except in the city of Bombay, where, should compulsory vaccination be introduced, the private practitioners should be remunerated, as in England and Scotland, for each certified successful case.

17. During the last seven years the number of Vaccinators employed, and the amount of work, have steadily, and *pro rata*, increased, as the following table will show :—

Year.	Number of Vaccinators.	Annual number Vaccinated.
1861	201	259,668
1862	197	244,792
1863	203	267,995
1864	218	332,894
1865	245	358,178
1866	263	379,497
1867	270	391,415

131,747 more children were vaccinated in 1867 than in 1866, and an average of about 1,827 operations performed by each Vaccinator, or 6 per diem on every working day in the year.—

Working in Government Circles.

18. The working of the year points out considerable increase in the Central Circle and in others :—

Central	9,494
Kattiawar	1,266
Rewa Kanta	2,134
Presidency	2,119
Total	15,013

In the Presidency City there was a very satisfactory increase of upwards of 2,000 persons vaccinated; an increase in part due to operations being carried on amongst the followers of the Abyssinian Expedition, but chiefly to the increased exertions of the establishment. The increase, commendable though it undoubtedly is, is very far indeed from what must yet be looked for. In the other Government Circles there has been a decrease more or less:—

Sind	10,305
Southern	1,423
Northern	803
Total	12,531

19. The greatest falling off in vaccination is noticed in Sind. Decrease in numbers operated on in this province commenced in the previous year. The decrease in the other Circles is not of moment, and it is hoped will be more than fully made up during the year 1868.

Cause of decrease.

20. The diminished number vaccinated in Sind for the past two years, however, calls for more attention. The Superintendent states that the progress of vaccination continues to be satisfactory, notwithstanding the decrement. The main cause of the very considerable decrease, he states, is owing, in his opinion, to the reduced number of unprotected children in the province, owing to arrears having been nearly all vaccinated, and to Vaccinators having to work in sparsely populated districts. To this latter cause I would much prefer ascribing, to a considerable extent, the falling off, and to many of the Vaccinators not doing, as Dr. Pinkerton hints, as much work as might have been expected from them.

21. The vaccinations in Sind in 1860, when there were only 15 Vaccinators, amounted to 59,568, or 3,983 more than in the year 1867, when 30 Vaccinators were employed; and the arrears alluded to by Dr. Pinkerton, which were commenced to be worked off in 1865 and 1866, taking his numbers as a stand point, have not, I consider, yet been cleared off, though they may now undoubtedly be less closely distributed, and consequently less easy of access to the Vaccinators. It must be always, however, extremely difficult to state the probable number of children to be operated on in this or other Divisions, owing to incorrect knowledge of the population, and the absence of registration; but there is no doubt that the keeping up vaccination under existing circumstances to a fair amount, can only be effected by the attentive working of the establishments and the aid of the various authorities.

22. Vaccination under Native Chiefs shows a total numerical increase on the previous year of 8,094. This improvement in numbers is shown to have occurred in the territories of certain Chiefs in Kattiawar, Sind, Rewa Kanta, the Deccan, and Southern Circle. In Kattiawar, under the Thakoors of Jhusdun, Wallah, Bhownuggur, Luktur, and Goondul, Jam of Nowanuggur, Chiefs of Jaitpoor, Mangrole, and Bantwa, Rana of Porebundur, and Nawab of Joonaghur. In Sind, in the territories of His Highness Meer Ali Morad. In Rewa Kanta, under the Nawab of Ballasindore, and Rajas of Chota Oodeypoor and Soonth. In the Deccan, in the country of Raja of Aukulkote and Begum of Peint. In the Southern Circle, under the State of Kolapoor and Sawunt Warree, Nawab of Sawunnore, and in the Jagheers of Echulkurunjee, Kagul, Bowrah, Torgul, Moodhul, Ramdroog and Jamkhundee. Decreased work is shown to have taken place in the Northern Circle, in the Mahee Kanta, and territories of the Dewan of Palunpoor, Thakores of Kakraj and Bhabhur, and Nawab of Rhadumpoor, and at Bhooj: in the former amounting to 1,490, and 434 in the latter. The work at Bhooj, by 4 Vaccinators employed by His Highness, is deficient in the extreme: it averages 176 vaccinations per man per annum.

Under Native Chiefs.

23. Examination of the reports of Superintendents points out how very advisable it is that the subject of vaccination should be more fully impressed on the Native Chiefs of this Presidency. They frequently, and I believe most willingly, employ Vaccinators, but their assistance to them in various ways, in some cases, is deficient. There is, to begin with, apathy and want of interest in the success of the men; in some, pay is irregular, and perhaps small; in others, they are allowed to employ themselves, or are employed in other work; in others again, they are left pretty much to themselves to get on in their very difficult occupation utterly unassisted.

24. Kattiawar may be instanced as a country of great extent, where the Chiefs employ a large number of Vaccinators; yet there is no territory where, it appears from the annual Report, less reliance can be placed in the work performed, or where small-pox has been more prevalent and destructive. Mr. Blomfield's Report shows how frequently he was disappointed, on his tour, at the appearance of the work and at the conduct of the Vaccinators. This officer, in a letter on the subject of altering the present system in Kattiawar, says: "The Vaccinators perform their work so carelessly that in many of the villages I inspected not more than ten or fifteen per cent. of the cases operated on could be termed successful vaccinations, also that many villages

are not visited at all. During the months of March and April, I found few villages free from small-pox, and in some the mortality had been very large."

25. The Political Agent was, I believe, about to bring the subject before Government, and I trusted that ere this it would have been considered. I deem it most advisable that all the Native Chiefs' Vaccinators should, if possible, be placed under the Superintendents through the Political Agents or chief Civil Officers, that they should look up to the Superintendents as their masters, receive regularly a fair pay on their certificates, and a thorough assistance from the authorities. Such arrangements would be sufficient to ensure the employment of good men, who would desire to retain employment, and consequently endeavour to perform good work.

26. I here give a list of the Native Chiefs in this Presidency who employ Vaccinators; and I would earnestly submit that this part of the system of Vaccination, which has never yet been brought properly within the line of Superintendent's work, may meet with the consideration it merits.

List showing the Native Chiefs who have employed Vaccinators in their Territories.

CENTRAL CIRCLE	Raja of Aukulkote. Begum of Peint.
NORTHERN CIRCLE	Dewan of Pahlunpoor and Dhanera. Thakore of Wao and Thurrad. Ditto Kakrij and Bhabhur. Ditto Warye, Morwara, Seogaum, Deodur, &c. Nawab of Rhadunpoor. Maharaja of Edur and Amnugger. Thakore of Paseena, Danta, and Subur Kanta. Ditto Rehwur Zilla and Pal Pole. Ditto Kuttosun, Baveesee, and Watruk Kanta. Nawab of Cambay.
KATTIAWAR CIRCLE	Thakore of Jhusdun. Jam of Noanuggur. Thakore of Morebee. Ditto Limree. Chiefs of Jaitpoor. Rana of Porebunder. Thakore of Wullah.

KATTIAWAR CIRCLE—*contd.*

- Chiefs of Bujjana.
- Ditto Dussara.
- Ditto Wunnod.
- Ditto Jeenjoowara.
- Thakore of Bhownuggur.
- Raj of Drangudra.
- Thakore of Luktur.
- Chiefs of Mangrole.
- Ditto Bantwa.
- Thakore of Goondul.
- Ditto Wudwan.
- Ditto Rajcote.
- Ditto Pallytana.
- Nawab of Jafferabad.
- Chiefs of Deeda.
- Nawab of Joonaghur.

REWA KANTA CIRCLE ....

- Nawab of Ballasindore and of Raja of Loonawara.
- Raja of Rajpeepla.
- Raja of Chota Oodeypoor.
- Raja of Barriah.
- Raja of Soonth and Thakoor of Kuddana.

SOUTHERN CIRCLE ....

- Raja of Kolapoor.
- Nawab of Sawunnore.
- Jagheerdar of Veshalghur.
- Ditto Echulkurrunjee.
- Ditto Bowrah.
- Ditto Anzara.
- Ditto Torgul.
- Ditto Meeruz.
- Ditto Koorundwar.
- Ditto Sanglee.
- Ditto Moodhul.
- Ditto Ramdroog.
- Ditto Jumkhundee.
- Ditto Kagul.
- Ditto Bhore.
- Ditto Ultapadee.
- Ditto Pulton.
- Ditto Jhutt.
- Sawunt Waree State.

27. It will be satisfactory to His Excellency in Council to observe that from the period when the Municipalities of this Presidency commenced the entertainment of Vaccinators the system has been gradually meeting with appreciation. In 1863 the Municipality of Hooblee set the example; it was followed by those of Kotree, Sattara, Tanna, and Belgaum; and in 1865 there were vaccinated by them 7,619 children. Subsequently Poona, Ahmednuggur, Dholka, Veerungaum, Barsee, and others, adopted the plan. There were in 1867 twenty-five Vaccinators kept up by Municipalities, whose work amounted to 18,391 vaccinated children. The Municipalities who are thus "identifying themselves with efforts to render the protective system of vaccination more extended, efficient, and complete," deserve to be recorded, and are here entered.* The extension of this system is much to be desired, as it is one which, under proper superintendence, must prove of undoubted good.

Work of Municipalities.

* Tanna	1
Poona	2
Ahmednuggur	1
Sholapoor	1
Barsee	1
Pundherpoor	1
Beejapoor	1
Baramuttee	1
Oorun	1
Vingorla	1
Ahmedabad	2
Veerungaum	1
Dholka	1
Khanapore	1
Moon	1
Kurrad	1
Koregaum and Waee	1
Walwa	1
Gudduk and Belgere	1
Belgaum	1
Hooblee	1
Gokak	1
Kotree	1
	25

28. No general rule exists as to the superintendence of the work of these men. Those employed by Municipalities, where there are Civil Surgeons, are under their superintendence; those in towns and districts at a distance from stations are under the Superintendents of Vaccination, in the matter of supervision of their work.

29. The local establishment of vaccination at present only exists in Sind. It numbers thirteen, and these are paid out of local funds. The establishment under the superintendence of Dr. Pinkerton continues to uphold its character for utility. The number vaccinated by its members was very considerable during the year 1867, but less than in the previous year by 1,740.

Local.

30. Out of the total number of children operated on 365,275 were pronounced successful vaccinations, and 26,140 unsuccessful or doubtful, giving a result of only 7·16 per cent. of the latter. There is an improvement here on former years, for the percentage of unsuccessful and doubtful cases was in—

Successful operations.

1862	10·57
1863	11·70
1864	8·60
1865	7·83
1866	7·83
1867	7·10

Accuracy of returns.

31. Superintendents have generally pronounced in a very favourable manner on the accuracy of the returns of vaccination. In the Northern Circle and in Sind, where the supervision was most perfect, the reports are highly satisfactory. In the former Circle only one instance of false returns was discovered; in Sind, none. In Kattiwar a case was found by the Superintendent; none others are mentioned.

Capillary tubes.

32. A great aid in favour of the decrease of this crime, of preparing false returns of vaccination, exists in the use of Husband's capillary tubes by the working Vaccinators, every one of whom should be most carefully instructed in the correct mode of charging them. Vaccine lymph can be carried in these tubes with far more surety than by any other known method, and with these in possession the Vaccinator can go on his way without fearing the difficulties, which not unfrequently occur, in obtaining fresh lymph from village to village, or from those which arise from obstinate delays on the part of the people, or want of success. All these were formerly prolific causes of false returns: the Vaccinator dreading to report his misadventure to his Superintendent, preferred to trust the result to chance. A Superintendent, when visiting a Vaccinator, should never leave him without being certain of his ability to guard himself against these serious troubles attending his work.

Sex.

33. There were 210,378 males and 181,037 females vaccinated, or 54 of the former to 46 of the latter. This is about the usual proportion observed.

Infantile vaccination.

34. 159,575 children under one year were operated on, and 231,840 above one year, giving a proportion of 41·00 of the former to 59·00 of the latter. This is an improvement on the general return over former years, for in 1865 it was 35, in 1866 it was 37, and is a satisfactory indication that vaccination is more appreciated. It appears, however, as has been stated in previous reports, that the subject of infantile vaccination is more favourably received in some districts than in others; and unless the ages are entered incorrectly by the Vaccinators—and of this there is not much evidence—there is still

manifest the frequently shown aversion to it in the Southern Circle. The highest percentage is still maintained in the Northern Circle (Gujerat). The proportion in various Circles is here shown :—

Circles.	Government Vaccination.		Native Chiefs' Vaccination.	
	Under.	Above.	Under.	Above.
Central	30	70	50	50
Southern	**18**	**82**	**27**	**73**
Northern	66	34	56	44
Sind	33	67	32	68
Kattiawar	40	60	36	64
Rewa Kanta	53	47	43	57
Presidency	46	54	36	64

35. Attention to infantile vaccination is one of the most important duties of the Superintendents and their establishments, for it is a well-known fact that the deaths from small-pox in this country,—setting aside those the product of inoculation,—as a rule, occur amongst the unvaccinated children of towns and villages whose inhabitants persist in refusing to accept vaccination; and only when the disease is amongst them, and they are full of its dread, is the Vaccinator hurriedly called from his regular work to render his aid to those that have been spared.

Small-pox.

36. Small-pox was prevalent during the year to a considerable extent. From the reports of the Vaccinators, which are almost the only means of ascertaining, it had occurred to a greater or less extent in 15 districts in the Central Circle, 21 in the Southern, 17 in the Northern, 9 in Kattiawar, but prevailing generally from March to May in this country, and 19 in Sind. It was also reported slightly in the Rewa Kanta and Punch Mahals, and in the Western Circle, in several villages, especially those situated on high-roads; *e.g.*, Panwell, Kurjut, and Nagotna. In the Pahlunpore State, at the termination of 1867 and the commencement of the year 1868, it broke out in Tehrwadá and neighbouring villages, and 140 deaths occurred within a short period. The State Vaccinator was as soon as possible at the place, but too late to be of much service. The negligence of the village officials in failing to bring this state of things to notice was reported to the Political Agent.

37. In the Mahee Kanta it also was present in the hot months. The Political Agent on being applied to readily assented to the employment of an additional Vaccinator.

38. In Kattiawar the disease prevailed to a great extent. The Superintendent states that some of the cases he saw were measles, which also creates great havoc amongst the children. The system of vaccination, to which I before alluded, is here at fault, and the superintendence weak. Thirty-eight Vaccinators are employed in this country,—thirty by the Chiefs and eight by Government. The Reports of Surgeon Blomfield show that so large a number of men working over an immense extent of territory require strict supervision, which under the present system cannot possibly be afforded. Thirty-eight men vaccinating in Kattiawar operated on 37,357 children; whereas thirty-six men in the Central Circle performed on 71,037, almost double the number, and the work well done.

39. In Bombay, small-pox prevailed throughout the year 1867; the registered deaths from it were 1,053; and the following table, for which I am indebted to the Health Officer of the Municipality, shows the periods of life, and in what castes, the mortality occurred: there may probably have been between 5 and 6,000 children who suffered from small-pox in Bombay during the year. One-third or more of these added to the number vaccinated under one year, viz., 5,072, and this again to a probable number of unvaccinated children who may have, under one year, escaped the disease, would go far to prove that not much more than about one-third of the children born in the year are vaccinated:—

	Ages.	Deaths from Small-pox in	
		1866.	1867.
Days	1 to 15	4	6
	16 to 30	..	3
Months	1 to 6	81	124
	7 to 23	334	283
Years	2 to 4	317	324
	5 to 6	91	96
	7 to 9	76	45
	10 to 13	37	54
	14 to 24	66	68
	25 to 34	49	47
	35 to 44	12	4
	45 to 54	8	..
	55 to 64	2	1
	65 to 74	2	..
	75 and over	..	..
	Total...	1,079	1,055

Race or Caste.	1867.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Boodhist,—Jain, &c.	..	2	5	9	6	6	4	1	..	..	..	..	33
Brahmin	..	4	12	5	3	..	1	..	..	..	2	1	28
Lingæt	..	..	..	..	..	2	..	..	..	..	..	..	2
Bhatia	..	2	3	3	2	1	1	..	..	..	..	..	12
Hindoo of other Caste	8	33	103	97	97	75	41	32	9	6	7	10	518
Hindoo Out-caste	..	5	30	21	17	16	13	2	3	2	1	4	114
Mussulman	6	14	76	61	50	32	13	3	3	2	1	1	262
Parsee	..	2	4	6	10	11	4	..	1	..	..	1	39
Jew	..	..	3	1	1	..	..	..	..	..	..	..	5
Native Christian	..	3	7	8	1	7	4	1	..	..	..	..	31
Indo-European	..	..	..	..	..	..	..	..	..	..	..	..	..
European	..	..	1	1	2	1	..	..	..	..	..	..	5
Negro-African	..	1	3	..	1	..	..	1	..	..	..	..	6
Chinese	..	..	..	..	..	..	..	..	..	..	..	..	..
Other and Unknown Races	..	..	..	..	..	..	..	..	..	..	..	..	..
All Races and Castes	14	66	247	212	190	151	81	40	16	10	11	17	1055

The deaths from small-pox in unvaccinated children in the Presidency City are here shown to occur chiefly between the seventh month and the twenty-third; those due to each month progressively are not known; but as far as this evidence goes it plainly proves the prophylactic to be necessary before the seventh or eighth month of infant life. This is more clearly shown in a table of mortality from small-pox occurring in 1868, which I purposely place in this Report :—

Table showing the Mortality from Small-pox in the City of Surat, from the 1st of February to the 29th of March 1868.

City of Surat.	Deaths from Small-pox.								
	Age.								
	Months.		Years.						
Districts.	From 1 to 6	From 6 to 12.	From 1 to 3.	From 3 to 5.	From 5 to 9.	From 9 to 12.	From 12 to 15.	Above 15.	Total.
Maidhaspoora	5	4	7	3	1	..	..	..	20
Haiderpoora	3	5	2	4	..	1	..	..	15
Sayethpoora	6	2	1	1	..	..	..	..	10
Sudrampoora	7	4	3	2	..	1	..	..	17
Beggampoora	2	1	6	..	4	..	..	..	13
Nawapoora	25	17	12	7	3	1	..	..	65
Sullabathpoora	..	4	2	..	..	..	..	..	6
Singadiawaur	1	..	2	1	..	..	..	..	4
Naunpoora	2	1	..	..	..	..	..	..	3
Chouk Bazar	..	2	..	..	..	..	..	..	2
Goppipoora	..	..	1	..	..	..	..	..	1
Moolaka Chakla	1	1	..	1	..	..	..	..	3
Waddee Kullia	2	..	..	1	..	..	..	..	3
Total....	54	41	36	20	8	3	..	..	162

The disease occurred in Surat in two months of the present year, and 162 children died in this city in the period named, 95 of whom were under one year of age; of these, 54 were under 6 months. Vaccinators were present, but their assistance was refused.

Value of infantile vaccination.

The Superintendent of Vaccination in Sind, in his report has some remarks on this subject. The susceptibility to small-pox, and consequently the susceptibility to the more certain action of vaccination, are argued on to the conclusion that vaccination in infancy, *i. e.*, under one year, need not be much insisted on.

40. The above tables of deaths at Bombay, and recent outbreaks at Surat and Pahlunpoor, show when the susceptibility in this country is greatest; and the conclusion is that, if vaccination is to be prophylactic, it must be performed under one year, and somewhat before the period of greatest susceptibility to small-pox.

41. It is the duty of Superintendents and their establishments to do all in their power to foster this opinion in the minds of the people, for, especially in a system of vaccination like that of this Presidency, the unvaccinated must be operated on in the progress of the work, regardless, to a certain extent, of age.

Registration.

42. The Superintendents of Vaccination have not hitherto been able to obtain reliable returns and reports of small-pox in their districts from the various authorities; but in future, the Resolution of Government in Financial Department, No. 535, dated 10th May 1867, requires the registration of births and deaths, and it is presumed the causes of the latter, to be kept in every village.

43. In Bombay the registration of births, under the Municipal Act, gives no idea of what the vaccination requirements are. Taking it, however, as a reference, we find that the registered births for the year 1867 were 5,115, and that the vaccinations performed under one year were 5,072. This would be a most gratifying result, but the registration shows that the rate of births to population is only about 7 per thousand; whereas the acknowledged rate to population is about 30 to 33 per thousand. As, however, Bombay is peculiarly situated, with reference to what may be called its floating population, I am of opinion that twenty, perhaps even less than that, should be taken as the rate of births per 1,000, which would give about 308 births to be registered weekly, and, allowing for decreasing causes, between thirteen and fourteen thousand to be vaccinated under one year in Bombay per annum. From the foregoing, it may be observed that the registration of births in Bombay under the present system cannot be taken as a guide to correct vaccination.

44. It is at the same time evident that, from the constant presence of small-pox, there is a great necessity for the spread of vaccination in the city and outskirts of Bombay. In the Resolution of Government, No. 986, dated 27th May 1867, on my last Annual Report of Vaccination for 1866, it is directed that early attention should be given to the subject of increasing deaths from small-pox. A year has elapsed since then, deaths from small-pox have been much as they were, notwithstanding the earnest endeavours of the Department; and the only and best means I can, after much consideration on the subject, recommend, is a system of compulsory vaccination. In stating this it does not appear to me that much is required to be said in addition to the foregoing remarks; but it may be as well to bring to the notice of Government, briefly, the system of vaccination which was inaugurated in 1858. The old system of domiciliary vaccination, its abuses being many, was changed in this year under the recommendation of Dr. Peet, the then Honorary Inspector of Vaccination in Bombay: a paid Superintendent was appointed with a small number of Vaccinators under him; there were six public stations for vaccination, and the Superintendent himself vaccinated at each of these in course; the Vaccinators were employed in searching out children for vaccination; in endeavouring, after the operations, to ascertain results, and bring as many forward for inspection as possible. This system is at present in existence, and is one which leaves so very much to the people themselves, that it is wonderful to see so many avail themselves of it. Such a system, however, is utterly unsuited to altered times, and to a world port like Bombay, where every exertion should be used to place it in sanitary equality with, and even in advance of, other towns and cities.

45. The details of what should be the working of a system of compulsory vaccination cannot be entered upon in this Report; but the employment of all medical practitioners, including those qualified by the University of Bombay, or by the original examination of Grant Medical College, should be one essential part of it, and the continuation of public vaccination stations another.

46. The local Superintendent of Vaccination in Bombay, a Brahmin, graduate Grant Medical College, of much intelligence and long experience, reports on this point:—

"My experience, and that of every Officer of the Vaccine Department, has shown me, beyond any possibility of being denied, the great eagerness and anxiety disclosed by almost all classes in the community to get their children vaccinated.

"Such of the Abyssinian Force as were vaccinated gave us abundance of fresh lymph, with which we could vaccinate all who applied during the last months of the year, but so soon as that source of supply was exhausted we were as badly off for vaccine lymph as ever,—and it was the greater pity as the want occurred at the very time it was most needed, when, on account of the setting in of the small-pox season, the number of applicants for the operation began to increase.

"Nothing short of legislative enactment can meet this. I am fully persuaded that if an enactment, making it compulsory to get one's child vaccinated, and, when successfully vaccinated, to allow lymph from it, is passed, it will not meet with any serious opposition from any portion of the community on the score of religion."

47. The willingness shown to exist by the Superintendent must be taken with some drawback, for it is chiefly in the season when small-pox is known to exist that so many come forward.

48. The insufficiency of vaccine lymph, alluded to by the Superintendent, exists simply in the unwillingness of the people to allow the removal of lymph in any way from the arms of their vaccinated children. This is the great difficulty the Superintendent in Bombay has to contend against: it is one which compulsory vaccination would go far to reduce, without bearing much on individual prejudices.

Inoculation.

49. The subject of prohibition of the practice of inoculation with small-pox matter has for several years engaged attention, and has been recommended frequently to the notice of Government. It is under consideration whether a law, similar to that made for Bengal in 1865, shall be enacted for Bombay.

50. The reports of Superintendents do not point to the knowledge of the existence of any general inoculation. In Sind it has, however, been clearly shown to have originated, and kept up small-pox for months in one district.* There is no doubt that it exists, and is freely carried on, amongst the Belooches. The following extract from the annual Report of the medical Officer in charge of the Jacobabad Dispensary is characteristic:—

"In the neighbouring villages the Belooch had their children inoculated by one of their tribe in preference to having them vaccinated, and I know of one instance where ten children were twice inoculated who had been previ-

* This was brought to the notice of Government at the time as bearing on Bengal Act. IV. of 1865, for making the practice of inoculation penal.

ously vaccinated,—the inoculation was, however, unsuccessful,—so little faith had these people in the immunity conferred by vaccination."

51. The absence of reports of inoculation in the various Divisions I do not look upon as decisive of its non-existence; without doubt it does exist in the outlying parts of our territories and in Native States, as particularly shown in the Report of Mr. Dorabjee Hormusjee, G.G.M.C., in charge of His Highness the Rao of Kutch's Dispensary and Hospital. He says:—

"With the exception of one caste, the Borahs, the people generally are averse to vaccination, but are greatly in favour of inoculation; for I have observed, during the epidemic of small-pox that broke out last year, that numbers of them flocked to the Inoculators, even at the sacrifice of some money, but none of them of their own accord had recourse either to the Dispensary or to the Vaccinators, except the Borahs.

"I have no doubt that the epidemic raged very violently, because inoculation was practised to a great extent. Unless, therefore, inoculation be made criminal or punishable by law, and vaccination be made compulsory to some extent, it is not unlikely that another epidemic may break out with equal violence."

Character of the vaccine lymph.

52. The character of the vaccine lymph in use is reported on favourably. It has been renewed by lymph from the "National Vaccine Institution." The results of the use of this lymph, which was distributed to various Superintendents, were as follows:—

Circles.	Tube result.	Ivory-point result.
Presidency	Successful	Inert.
Central	Successful	Inert.
Southern	Inert	Inert
Northern	Not properly successful	Inert.
Sind	Successful	Inert.
Rewa Kanta	Inert	Inert.
Kattiawar	Inert	Inert.

53. Vaccine lymph sent from England on ivory points and on glasses is, as has been previously stated, almost invariably useless, while tube lymph is generally successful. I would submit that the quantity sent out in tubes is still insufficient, as it is desirable that fresh English lymph should be as frequently as possible distributed throughout the Presidency, particularly in Bombay itself.

English vaccine lymph.

54. When vaccine lymph is observed to deteriorate it is at once changed, for no greater blow to vaccination can be dealt than continuing to vaccinate with unsound lymph. Complete supervision, close checks, ability to renew lymph from tubes, more frequent supplies from England, and encouragement to frequent intercourse between the Vaccinators themselves, aid in keeping down any tendency to such incorrect vaccination.

55. The support given by the Civil and Political authorities is warmly acknowledged by the Superintendents. It is this intelligent aid that gives confidence alike to Vaccinators and to people; for in some parts, "without it," as stated by one Superintendent, "my utmost exertions would be of little avail."

Assistance from the Civil authorities.

56. The services of Superintendents have during the year met with my approval; and I beg to record my opinion of the satisfactory manner in which their work has been performed. The zeal of Doctors Pinkerton and Turnbull, Mr. Blomfield, and Dr. Muncherjee Byramjee Colah, has been prominent.

Superintendents.

57. The establishments have been favourably mentioned by the Superintendents. During the year the Wukeel of His Highness the Khan of Khelat asked for the temporary services of a Vaccinator. This was sanctioned by Mr. Mansfield, as the introduction of vaccination into the heart of Belochistan, under such favourable circumstances, was not to be neglected. An experienced Vaccinator was sent in April with carefully charged capillary tubes. The Vaccinator who was accredited to His Highness the Khan, did his work well; there was no objection raised to vaccination itself: they were glad, indeed, to have it; but His Highness was unwilling to force his subjects to allow lymph to be taken from the vesicles. The objections of the people were strong against this; in fact, they were "insurmountable." The consequence was the Vaccinator could not keep his lymph going. The Superintendent of Vaccination, Sind, says, and I trust that what he says will prove correct, that the "result of the few hundreds vaccinated may yet induce His Highness to entertain Vaccinators of his own." The good conduct and

zeal of Kishen Chand, local Vaccinator in Sind, who thus carried vaccination into the territories of His Highness the Khan of Khelat, were much appreciated by His Highness; and Sir H. Green, Commanding the Frontier, brought his conduct most favourably to attention, in the hope "that his successful exertions to introduce the blessings of vaccination into the wild countries beyond our border might be deemed by Government worthy of some notice."

Suggestions.

58. In paragraph 4 of this Report I have alluded to the injury done to vaccination by incomplete superintendence. I must now state that such inducements as are available should, in my opinion, be given to Officers employed as Superintendents, to make them desirous of retaining such appointments; for the good to be done by a Superintendent who knows, and is known in, his Division is incalculable. The inducement which appears to me the most reasonable refers to the pay of these Officers, and to point out my meaning I must extract from the G. O. G. I. No. 370, dated 4th April 1867:—

	Surgeon Major.	Surgeon.	Assistant Surgeon, 5 years.	Assistant Surgeon under 5 years.
Civil Appointments.	Rs.	Rs.	Rs.	Rs.
Superintendents of Vaccination ..	950	750	550	400
Civil Surgeon, 1st Class	1,050	850	650	500
Ditto 2nd Class	950	750	550	400
Military.				
Medical charge of a Native Regt..	1,000	800	600	450
Ditto Cavalry, with Horse allowance.	1,090	890	660	510

From this scale it is shown that a Superintendent of Vaccination is classed with the lowest paid medical Officer in the Service; viz., the Civil Surgeon of the 2nd Class, who has Jail superintendence and other advantages, to which the Superintendent of Vaccination has nothing to compare. The onerous duties of a Superintendent during the season of his supervision I need not enter on: they are such as to lead me respectfully to urge on Government the recommendation that their pay should be arranged according to the rate

laid down for the medical charge of Native Regiments; and I feel sure that, if the appointments in the Department meet with this consideration, it will prove of infinite advantage, by keeping in it Officers who are interested in the success of the work,—a point which the past history of vaccination and its superintendence shows to be one of vital importance to its interests.

Certificates.

59. Superintendents of Vaccination have not been backward in bringing to notice the good that would be effected by certificates of successful vaccination being exacted from all candidates for Government employment, in the absence of evidence of protection by small-pox. So far back as 1852 or 1853, and in the present year by Mr. Reid, Collector of Dharwar, it was recommended. This arrangement has been for some time carried out in Madras. The Government of the North-Western Provinces has now issued orders to this effect, as pointed out in letter from the Secretary to Government, North-Western Provinces, to the Superintendent General of Vaccination, North-Western Provinces; and in the absence of a system of compulsory vaccination throughout the country, I consider the accomplishment of such a recommendation would be of great use, and in no way whatever objectionable to religious or caste prejudices.

Establishment.

60. Certain other points, with reference to the still better working of the establishments, have been brought forward by Superintendents; and as it appears to me they would be of considerable moment in adding to the facilities for vaccination and to the improved position of the Vaccinators, I beg to bring them forward here, and to state that, in my opinion, they merit the early and favourable consideration of Government.

61. The first is the grant of travelling batta to the Vaccinators. These men do not receive a high rate of pay; they are obliged to be constantly on the move; and, as the distances they have to cover are very considerable, they are necessitated to keep up two establishments; that is, they are obliged to leave behind, and provide for, their families. All this entails expense; and it is perhaps not to be wondered at that instances have occurred of men diverting to their own uses the little allowance which should be given to the mothers or fathers of children who are taken to villages for lymph purposes.

62. The whole of the members of every other Government moving establishment (including even the Vaccination Establishment in Sind) receive travelling batta when absent on duty, and it would, I think, be only a just boon to these men that they should be dealt with in a similar manner.

63. The Vaccinators might either draw a fixed monthly allowance according to the rates laid down for persons in the Revenue and other Departments, of like pay and standing with Vaccinators, or draw the amount expended monthly in contingent bills. The former appears to me most suited to the class of persons.

64. The second point is the establishment of Native Assistant Superintendents in each Circle. This has been a subject of much consideration with me; and I have come to the conclusion that they would be most useful aids to the Superintendents, and be of immense service to the truthfulness of the work.

65. I will on this subject quote from the annual Report of Dr. Pinkerton, the Superintendent of longest experience in this Presidency, and who speaks from experience :—

"The more I see of our system of vaccination the more am I convinced that Sir George Clerk's idea of employing Native Deputy Superintendents to assist the European Superintendents was wise and correct, and the carrying of it into practice would, I believe, bring the several vaccination establishments to a degree of efficiency never yet reached even in the Bombay Presidency, where so much has been effected without their assistance. It seems a waste of time to argue in favour of Native Assistant Superintendents, for the thing stands self-evident, that no single unaided European Officer can exercise a continuous watch over men scattered over 50,000 or 60,000 square miles. And here I may be permitted to say, in advocating the employment of Native Assistant Superintendents, that Sir George Clerk's idea, although a wise one, was marred, and ultimately rendered futile by employing only Sub-Assistant Surgeons as Deputy Superintendents. Native medical gentlemen are the last men whom I should choose for Assistant Superintendents of Vaccination; and Sir George Clerk's plan of solely employing Sub-Assistant Surgeons signally and completely failed. Still this failure by no means implies that a plan for employing other natives would also fail. I have found the two Assistants under me useful to a degree I had not even anticipated. I may be permitted then to say, that I think Native Assistant Superintendents should be employed in all Circles of Vaccination, and that good men, chosen from among the Vaccinators themselves, should be promoted to Assistant Superintendentships. This would open up careers for young men entering the Vaccination Department, and would do more than anything else I know of to stimulate Vaccinators to work well, to render honest returns, and to maintain their integrity in all relations with the people among

whom they work. In concluding this subject, I would beg to recommend that a grade of Native Superintendents to assist the European Officers be made in all establishments. It is worthy of note that when Surgeon Pearson, some years ago, adopted the Bombay system of Vaccination in the North-Western Provinces, he did not fail to strike the one blot in our system, and he included in his establishments a grade of Native Assistant Superintendents."

66. I agree with all that Dr. Pinkerton has written on this matter, and think that it is one which claims, together with that of batta to the Vaccinators, the earnest attention of Government.

67. The appointments of Assistant Superintendents would not have any effect on the active movements of the Superintendents through their Districts; but as such appointments would decrease the operative power of the establishments, it would involve an increase to each of two Apprentice Vaccinators. Both the above arrangements have been carried out for some time in Sind, and have worked well.

I have the honour to be,
Sir,
Your most obedient Servant,
F. S. ARNOTT, M.D., C.B.,
Inspector General, Indian Medical Department.

VACCINATION UNDER SUPERINTENDENTS.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D.

Acting Superintendent.—Assistant Surgeon E. H. R. LANGLEY, A.B.

Establishment.—Thirty-six Vaccinators under Government, two under Native Chiefs, and nine under Municipalities.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1866	61,543	....	....	57,847	94
	1867	71,037	9,494	....	68,130	95·9
Native Chiefs	1866	953	....	....	786	82·5
	1867	1,668	715	....	1,417	84·9
Municipalities	1866	213	....	....	190	89·2
	1867	4,120	3,907	....	3,508	85·1

I assumed charge of the Office of Superintendent of Vaccination, Central Circle, from Dr. Dann, Civil Surgeon of Ahmednuggur, in the beginning of November 1867, Dr. Dann himself having but a short time previously received charge from Dr. Turnbull, Superintendent of Vaccination, Central Circle. As no Report for the ten months in which Dr. Turnbull held the charge has been furnished to me, these remarks must necessarily be meagre in detail, and altogether not as full and complete as I feel they ought to be.

"1. The returns of the year (1867) under report show a considerable increase in the number of operations performed in the Central Circle when compared with the former year.

"2. This great increase is due, I think, *first* of all, to the members of the establishment who have performed their work with great zeal and energy; *secondly*, to the very numerous visits which my predecessor, Dr. Turnbull, in person made to the villages, and the number of operations he himself performed (for nearly two-thirds of the children were operated on by Dr. Turnbull himself); *thirdly*, that in almost every village the inhabitants have shown themselves more anxious to avail themselves of the benefits of vaccination.

"3. I am unable to state whether there has been a decrease in the number of cases of small-pox over that of the year previous, as the returns enabling me to effect this have as yet not reached my Office.

"4. Not one case of inoculation has been reported during the past year.

"5. *Vaccination in Collectorates.*

Collectorate.	1866.	1867.	Compared with 1866.	
			Increase.	Decrease.
Poona	15,195	12,358	....	2,837
Ahmednuggur	10,684	18,748	8,064	....
Khandesh	13,524	15,056	1,532	....
Kulladghee	5,535	6,300	765	....
Tanna	16,605	18,575	1,970	....

The above table shows an increase in Ahmednuggur, Khandesh, Kulladghee, and Tanna, and a decrease in Poona. In the collectorate of Poona during the past year, the Municipal Commissioners of Sholapoor, Pundhurpoor, Barsee, Burumuttee, Sunjorla, and in Poona itself, have entertained Vaccinators. Last year (1866) Beejapoor was the only town which entertained a Vaccinator.

"6. The Vaccinators have conducted their duties most satisfactorily. One Vaccinator was dismissed the Service for bad conduct. The largest number of vaccinations in the Tanna Zilla was performed by General No. 157 (Ballajee Chalka), and in the Central Circle by General No. 237 (Dhoondoo Chintaman). Dr. Turnbull was much pleased with the work which these men performed.

"7. Husband's capillary tubes have been generally employed for conveying lymph from place to place; the quality of the lymph thus transported has generally on trial proved good.

"8. Of the total number, 36,366 or 51·1 were males, and 34,671 or 48·8 were females: this shows that the males still preponderate.

"9. The following table will show the proportions per cent. of each caste vaccinated during the past year as compared with the preceding year; it shows very little change, except as regards Hindoos:—

Year.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.
1866	1·7	87·9	4·5	....	5·9
1867	0·2	90·1	4·1	0·1	5·6

"10. The number of infants operated on is much greater this year than it has been for any previous period; 28·8 or 20,496 of the operations were on children under one year of age.

"11. The percentage of success has been much greater. In 1866 it was 93·9, in the present year (1867) 95·9. Not a single false name, I am informed, was discovered during the year. The lymph has generally been active, producing vesicles well developed.

"12. Before concluding my Report, I beg most respectfully to call to notice the 23rd paragraph of Dr. Turnbull's Report for 1866, in which he points out the almost absolute necessity of granting travelling batta to Vaccinators."

Native States.

A great increase in the operations, as shown by the table at the heading of this Report, as compared with former years has taken place during the past year. In 1866 953 or 82·4, in 1867 1,668 or 84·9. The Chief of Jowar has expressed a wish to the Collector of Tanna for a Vaccinator to be sent to carry out vaccination in his territory, all expenses incurred by this laudable undertaking to be defrayed by the Native Chief. A Vaccinator, a man upon whose experience and judgment I can place full reliance, shall be deputed to carry out this work as soon as possible.

SOUTHERN CIRCLE.

Superintendent.—Surgeon H. Day, M.D.

Establishment.—Twenty-nine Vaccinators under Government, twenty-five under Native Chiefs, and ~~ten~~ nine under Municipalities.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government....	1866	40,948	....	....	38,961	95·1
	1867	39,525	....	1,423	37,754	95·5
Native Chiefs ..	1866	18,019	....	....	17,066	94·7
	1867	19,972	1,953	....	19,033	95·3
Municipalities ..	1866	7,229	....	....	6,655	92·1
	1867	6,941	....	288	6,477	93·3

The above Report shows that vaccination has been slightly progressive in the Southern and Western Circles during the year, and the increase is most marked in the number of cases reported as successfully vaccinated.

2. There has been no change in the number of Vaccinators employed. It will be seen that there is a large increase in the number of cases reported by the Vaccinators of the Native States, and this is the more satisfactory as it shows that the benefits of the operation are being more fully believed in by persons least under the influence of Government.

3. I think that the increase of successfully vaccinated cases is to be attributed to the new lymph introduced last year and spread about the country as much as possible.

4. The decrease of vaccination is rather large in the Rutnagherry Zilla; it appears that there has been some difficulty in getting children in that zilla, small-pox not having been so prevalent as in the year 1866.

5. The decrease in Dharwar has also been large: fever has prevailed to a large extent in that zilla.

6. In Sattara there is only a difference of 235, but it is on the wrong side.

7. Belgaum shows a very satisfactory increase of 1,238 cases.

8. During the year, I have visited the Sattara Districts, the Kolapoor State, and some of the jagheers of the Southern Maratha Country, also the zillas of North Canara and Dharwar.

9. I found the people of North Canara to be a fever-stricken population, scattered about in junglee villages very difficult to get at, and but little alive to the dangers of small-pox, which will account for the falling off of 208 cases.

10. At the village of Kulghutgee, zilla of Dharwar, I found the people fully alive to the benefits of vaccination: for small-pox having visited the village, only one case among 18 vaccinated children occurred.

11. I have been satisfied on the whole with the conduct of the Vaccinators, and I have only had to recommend the dismissal of one man, viz., the Vaccinator of the Jagheerdar of Jhutt. I found it necessary to fine the Vaccinator of Sircy for having lost his lymph, since which time he has been doing better.

12. All demands for lymph made upon me I have satisfied as speedily as possible, and in my travels always carried about a few tubes to supply Vaccinators with, when I thought a renewal of their lymph advisable.

13. I am still of opinion, as stated in my letters No. 56 and 62 of 1867, that it would be a highly desirable measure to employ men educated in the vernacular class of the Grant College in this department, but I fear that the expenses of the department would be largely increased thereby: but vaccination, of all things, to be beneficial, should be "thorough."

Comparative Table of Work performed in each Zilla of the Southern Circle of Vaccination by the Government Establishment for the year 1867, *contrasted with* 1866.

Belgaum, 11*th February* 1868.

No.	Names of Zillas.	Number of Vaccinators employed.	Total Vaccinated in 1867.	Average of Operations to each.	Successfully Vaccinated.	Percentage of Success.	Total in 1866.	Increase.	Decrease.	REMARKS.
1	Belgaum	6	7,479	1246·1	7,160	95·1	6,241	1,238	..	
2	Rutnagherry .	7	18,546	2649·3	17,886	96·2	19,611	..	1,065	
3	Sattara	6	5,931	988·1	5,521	93·9	6,166	..	235	
4	Dharwar	3	2,519	839·2	2,361	93·1	3,672	..	1,153	
5	North Canara.	5	5,050	1010·0	4,817	95·2	5,258	..	208	
	Total	27	39,525	..	37,754	..	40,948	1,238	2,661	

Return of the Vaccinators employed by the Municipalities of the Southern Circle for the year 1867.

Belgaum, 11*th February* 1868.

Number.	Month of year.	Sattara Zilla.					Poona Zilla.	Dharwar Zilla.		Belgaum Zilla.		REMARKS.
		Khanapoor.	Moan.	Walwa.	Waee and Koragaum.	Kurrar.	Punderpoor.	Gudduck and Bettigerry.	Hooblee.	Belgaum.	Gokak.	
1	January 1867	80	125	51	83	42	42	54	171	74	..	
2	February ,,	75	105	45	81	49	50	55	107	129	...	
3	March .. ,,	77	101	51	81	41	55	55	156	94	..	
4	April .. ,,	43	62	50	84	44	42	56	120	54	..	
5	May .... ,,	28	63	46	82	50	41	55	101	74	..	
6	June.... ,,	28	56	51	83	41	43	55	81	49	..	
7	July.... ,,	66	64	42	82	57	43	55	50	35	..	
8	August.. ,,	91	61	46	80	41	..	55	113	45	..	
9	September ,,	18	72	41	82	57	..	54	110	53	..	
10	October.. ,,	36	55	55	81	52	..	48	114	32	..	
11	November ,,	81	66	40	82	55	..	65	151	51	31	
12	December ,,	93	107	46	84	60	..	50	101	56	25	
	Total....	716	937	564	985	589	316	657	1,375	746	56	
	Average Monthly Number	59·2	78·1	47·0	82·1	49·1	45·1	54·3	114·7	62·1	28·0	

NORTHERN CIRCLE.

Superintendent.—MUNCHERJEE BYRAMJEE COLAH, M.D. (*Acting*).

Establishment.—Thirty-three Vaccinators under Government, twelve under Native Chiefs, and two under Municipalities.

Establishment.	Year.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1866	69,085	....	....	65,463	94·8
	1867	68,282	....	803	63,293	92·7
Native Chiefs ..	1866	22,043	....	....	19,986	90·7
	1867	20,553	....	1,490	18,376	89·4
Municipalities ..	1866	57	....	....	46	80·7
	1867	1,253	1,196	....	1,176	93·9

1. In fixing the course of my travels during the year, I kept in view the inspection of those portions of this Circle that were not visited by former Superintendents for some time back. Since the year 1863 the Native States of Pahlunpoor and Mahee Kanta had not been inspected, so the first four months of the year were spent in travelling through and examining the work of the Vaccinators of these districts. In the beginning of May I arrived at Ahmedabad, after finishing the inspection of the Native States and of such other Government Vacccinators whose stations lay in my course next to the Native States. The Surat Districts were left unexamined; so from Ahmedabad I travelled southwards to Bulsar, and before the setting in of the monsoon had time to inspect the work of four Vaccinators; viz., of Bulsar, Pardee, Bugwara, and Chicklee. During the rains I was stationed at Surat, and on fair-weather days inspected the work of the Vaccinators of Chowrasee and Oolpar, and left Surat for the districts again on the 5th of November, from which date up to the end of the year I travelled through the Broach Zilla and inspected the work of three Vaccinators.

2. The work of 24 Vaccinators has been examined during the year; of these, 10 belonged to the Native States, and 14 were Government Vaccinators. They were found to be working with a fair amount of zeal and industry, and, with one solitary exception, their returns were in the main reliable. Their old work was of a middling character, and, with the exception of that of three Vaccinators, their lymph was to all appearance good. The three Vaccinators whose lymph was bad were ordered to discontinue its use, and were provided with good lymph from their neighbours.

3. The table placed at the head of this Return shows a decrease in the number of operations performed during the year both in the British as well as in the Native States. Of the British States the decrease is slight, viz., 803 only, and is chiefly owing

to unavoidable breaks in vaccination which occurred in purgunna Dhundooka (Ahmedabad Districts) in March and April, and again in October and November, in consequence of the illness of the Vaccinators employed there (General Nos. 91 and 170), and to partial suspension of vaccination in purgunna Bardolee (Surat Districts) during July, August, and September, in consequence of the Vaccinator losing lymph and not promptly replacing it. The decrease in the Native States of Pahlunpoor and Mahee Kanta is also attributable to similar causes. Vaccination was not carried on at Rhadunpoor for five months (from April to August inclusive). In Deodur Talooka no work was done in November, as the Vaccinator was on leave. One Vaccinator of Mahee Kanta lost his lymph during the rains; a fresh supply was sent from Surat, but nearly one month was lost before he could commence work again.

4. Notwithstanding this decrease, it appears that vaccination is progressing satisfactorily in this Circle, for there is a steady increase each year in the number of children vaccinated under one year of age, as is seen from the following table :—

	Under one year.			Above one year.		
	1865.	1866.	1867.	1865.	1866.	1867.
British States.....	36,460	41,694	45,527	33,752	27,391	22,755
Native „	9,672	11,750	11,424	10,446	10,293	9,129

5. Of the lymph in use in this Circle, I have observed that when the children operated upon are of a somewhat fair complexion and thin-skinned, the resulting vesicles are normal in shape and appearance, but are somewhat small in size. The red areolæ also develope nicely in the majority of them. But the containing lymph, though clear, is not sufficiently viscid; it is somewhat watery in nature, and when preserved in capillary tubes retains its active qualities for at most eight to ten days, after which it becomes inert. In the dark children of Bheels, Tullavias, and of the Kaleepuruj people, the lymph does not produce anything like normal vesicles, nor is any red areolæ to be seen in them; but the fever of maturation is in almost all cases present. Speaking generally, therefore, the lymph in use is on the whole good; at the same time, it must be stated that it is not so good as it ought to be, or as what it was a few years ago, for some of the old and good Vaccinators have stated to me that the lymph in use in former years produced very good, large vesicles full of thick and clear lymph. The introduction of some active lymph in this Circle fresh from the cow is very desirable.

6. During the hot season reports of the deterioration of lymph were received from a few Vaccinators, and during the monsoon several reported loss of lymph. Where it was practicable, a child with fresh lymph from an adjacent worker was supplied; in other instances, fresh lymph in capillary tubes was sent from Surat.

7. Only one supply of fresh lymph from England was received, towards the close of the year; it was tried on two young and unprotected children, but the result was unsuccessful.

8. Among the Vaccinators of this establishment the following changes occurred: the Vaccinator of Rhadunpoor was dismissed on account of inefficiency and misconduct; Apprentice Vaccinator Bhikumbhai Bholoobhai (General No. 270), of Morasa, was also dismissed, on account of sending false entries; Apprentice Vaccinator Peerkhan Mahomedkhan (General No. 273), of Gogo, resigned the Service of his own accord; and Assistant Vaccinator Venaik Janardhun (General No. 47), of Oolpar, was allowed to retire from the Service. All the vacancies were filled up in due time, with the exception of the Rhadunpoor Vaccinatorship, to fill which a young man of industrious habits was sent, but His Excellency the Nawab of Rhadunpoor objected to confirm him. Much time was lost (nearly five months) in correspondence on this subject, and ultimately the then Political Superintendent of Pahlunpoor took upon himself the responsibility of filling up the vacancy.

9. As regards the conduct of the Vaccinators of the whole Circle, I am glad to state that the majority of them are hardworking and industrious; there are a few men of bad character and indolent habits: these are being gradually weeded out.

10. During the year under report small-pox prevailed in nearly all the Divisions of this Circle. Whilst I was in the Pahlunpoor States, in the commencement of the year, I accidentally came to know of the breaking out of small-pox in Tehrwara (talooka Deodur) and the neighbouring villages. Within a few days 140 deaths were reported to have occurred, yet no intimation of the prevalence of this disease was given by the Thakore or the other village officials to the Vaccinator in charge of the district, or to the Political Superintendent himself. The Vaccinator of the talooka was able soon to introduce lymph into Tehrwara and commence operations; but the mischief was already done, for he could find only a small number of children to vaccinate. The negligence of the village officials was brought to the notice of the Political Superintendent of Pahlunpoor. In Mahee Kanta it prevailed in the hot months of the year in many talookas; difficulty was felt in sending our men to all the places where it prevailed, in consequence of there being only four Vaccinators in the whole zilla. This was represented to the Political Agent, who readily assented to the addition of a fifth Vaccinator. The new man commenced work in October last. At Patree and Mundal, two remote portions of talooka Veerumgaum, it broke out suddenly in the month of May; no time was to be lost, for all at once reports reached me of its outbreak from the Collector, from the Mamlutdars, as well as from our Vaccinators, who asked for an extra hand. The nearest Vaccinator of Sanund promptly obeyed orders, and with two working men the outbreak soon subsided. In the Kaira Districts it prevailed to a very small extent, and in the Broach and Surat Districts reports of its existence were received from such places as were chiefly inhabited by Kolies (fishermen).

11. With small-pox measles also prevailed as an epidemic in almost all parts of this Division, and in some places it was so very fatal, from secondary chest affections and dysenteric purging, that the inhabitants devoutly wished the Sirkar (Government) would find out some remedy for *Ooree* (measles) as it has done for *Devi Matta* (small-pox).

12. In the Mahee Kanta States, whilst inspecting the Malpoor Talooka, I noticed that in many villages the people dreaded mine and the Vaccinators' approach, and oftentimes hours were lost before the children could be collected for inspection or vaccination. In one village, making myself particularly familiar with the villagers, I learnt that the Thakore of Malpoor had about a year ago levied a sort of vaccination cess on all inhabitants equally, from the Patel to the Dhera, at the rate of a rupee and a quarter for every child. The villagers believed that this was done by the desire of the Sadra Sirkar. As much as I could, I explained to them that what was done was improper, and without any one's sanction, and that such a thing would not be permitted again ; at the same time the Political Agent was informed of the circumstances, and requested to take such measures as might prevent a repetition of the same in future.

13. In paragraph 9 of last year's Report it was stated that Municipal Vaccinators in this Circle were not under the control of the Superintendent. In the month of October last the Collector of Ahmedabad, through the Deputy Inspector General of Hospitals, Northern Division of the Army, expressed a wish to place the Municipal Vaccinators in that zilla under the immediate control of this Office. As there are only two Municipal Vaccinators in the Ahmedabad Districts (one at Veerumgaum and one at Dholka), the inspection of whose work would not entail additional travelling, I readily assented to taking them under my care.

14. Mention was made, in paragraph 11 of last Report, of the castes of people who still entertain a dislike to vaccination. The little knowledge I have since derived enables me to state, that, with the single exception of one portion of this Circle, the whole is alive to the advantages derived from vaccination. There is no actual opposition anywhere, and from the Pahlunpoor and Mahee Kanta territories in the north to the Broach Districts in the south our Vaccinators have merely to contend against the passive indifference of the people.

15. The exception alluded to in the preceding paragraph is the southernmost part of this Division, viz., the Surat Districts. Our Vaccinators here have to contend against several difficulties : the extreme apathy of the village Patels, who do not give our men that assistance which it is in their power to give—in some instances they have been found to put obstacles in their way ; 2ndly, against the poverty and drunkenness of the villagers themselves ; when lymph is introduced and work commenced, there is such an extreme want of care on the part of parents, that few children can be seen on a week day after vaccination with entire vesicles fit for propagation of lymph ; and 3rdly, against inoculation, which still exists, though to a limited extent, in this zilla only of the Northern Circle.

16. It must not be understood, however, that the above remarks apply to all parts of the Surat Zilla—on the contrary, in many of its purgunnas vaccination is carried on as smoothly as in the other zillas. In those purgunnas which had hitherto offered resistance to our progress during the year is as follows:—Talooka Bugwara, which afforded difficulties in previous years, has now nearly every village more or less completely protected by vaccination. Oodwara, the seat of the most ancient fire-temple in Western India, is inhabited mostly by Parsee priests, who had hitherto rejected the advances of our Vaccinator. A personal visit during the year under report has altered matters, and nearly all unprotected Parsee children of this village have been now protected. In Oomersaree, a sea-coast village, two young men of about 20 and 21 years of age, both Parsees, died of small-pox in May, the knowledge of which induced many of these people to get their children vaccinated.

17. The Kolie (fishermen) population of the sea-coast villages continue to resist our efforts still. Their villages are situated in the midst of swamps of mud. Nearly all the male part of the population are out at sea for seven or eight months of the year with their country crafts, and return to their homes during the monsoon only, so to get over the ingnorant prejudices and the extreme obstinacy of the fisherwomen is a serious difficulty. But by patient perseverance they are sure to be overcome.

18. An opinion is entertained in some quarters that inoculation is only possible where vaccination is not introduced, but in this Circle I have found it to be otherwise. The fishermen prefer inoculation to vaccination, because, as they stated to me, they think vaccination ineffectual, as it produces vesicles only in parts where punctures are made; whereas they have great faith in inoculation, in which, though lymph is introduced into one part, the pustules make their appearance all over the body. These people resist vaccination, and send for inoculators to their villages. The villages of Kosumba and Bhundhere, situated within two miles of Bulsar, were thus inoculated in about May, though the Patels denied all knowledge of it. The inoculators, it seems, have raised their fee from half a rupee to twelve annas, and there is reason to suspect that the slight increase goes into the hands of Patels as hush-money for allowing the inoculators to practise their injurious vocation. In one village, Vad, in the Chicklee Talooka, the Patel not only got himself inoculated but some children of the village also. I personally satisfied myself of this by a visit to the village, and then reported the circumstance to the Collector of Surat.

Small-pox in the Northern Circle.

1. The following are the results of my inquiries regarding the small-pox returns of the Surat and Broach Zillas for the year 1866.

2. It was necessary to know in what villages of the different talookas of the Surat and Broach Districts small-pox prevailed, so that I should be enabled to go to all or some of them and examine the past work of our Vaccinators, as also to institute

particular inquiries regarding the prevalence of small-pox. For this reason the Collector of Surat was requested to favour me with the original village returns of the talookas of Chowrasee and Unklesur, and similarly the Broach Sub-Collector was requested to send the village returns of all the four talookas of Broach.

3. From the Collector of Surat, the village returns of talooka Unklesur only were sent to me, and these reached me very late, after I had left Surat for the Broach Districts, so that I had no opportunity of making any inquiries regarding them; and with reference to the returns of talooka Chowrasee, I was informed that "the Mamlutdar of Chowrasee does not receive nominal returns of small-pox from the Tullatees of the several villages, but merely verbal statements, which they again receive from the Vaccinators."

4. The Sub-Collector of Broach directed all the Mamlutdars under him to forward to me the returns required. In obedience to such orders, I received village returns of the Broach, Wagra, and Jumboosur Talookas; the Mamlutdar of Amode stated his inability to send any village returns of his talooka, as none such existed.

5. On a comparison of village returns, received as above, with the English return, one very important discrepancy was observed in the headings of the two. The heading in the third column of the English return is "Total number of cases of Small-pox during the year 1866;" whereas in the village returns of the talookas of Wagra and Jumboosur (from which the English returns were partly made up), the heading in the third column is "Total number of cases of Small-pox and Vaccination during the year 1866." And in the Gujarati returns of the villages of Unklesur Talooka, there is this additional difference, that they are stated to be for the year 1866-67, whilst the return made up from these in English is shown as a return for 1866.

6. Granting the figures put in the third column of the Gujarati returns to be correct, there would be, then, this important correction to be made in the English return; viz., to deduct from the total in the third column (17,268) the total of the fourth and fifth columns (11,378+4,661). This will give 1,229* as the correct number of cases of small-pox during the year.

7. But the question is, are the village returns made up from such sources as could be relied upon? With reference, at least, to the making up of one talooka return (of Chowrasee), I have, in paragraph 3 of this letter, quoted the Collector of Surat's statement on this point; and from the inquiries I made in the different talookas of Broach, I find that this statement is in the main correct. The village returns of the other talookas are principally made up from the oral statements of different parties. There is no register kept in any village, containing information on the various points of the small-pox return.

---

* This includes 213 cases of small-pox which are said to have occurred in the City of Broach, vaccination in which is not under this department, but under the superintendency of the Civil Surgeon of that place.

8. I will now state briefly the result of my inquiries in the Broach Districts. I visited all such villages of the Broach and Wagra Talookas in which, according to the Tullatees' returns, small-pox was said to have occurred in children some time after being vaccinated, and some deaths said to have resulted therefrom. I collected the children of such villages that were vaccinated during the year 1866, and examined them, one after another, according as their names were entered in the Vaccinator's register-book. In none of these could I find a single child with marks of small-pox, or any child that was said to have had small-pox at all, however mild. A few children in some of the villages had died subsequent to vaccination, and, on inquiry of the parents of such children, the cause of death was made out to be fever, pneumonia, diarrhœa, or some other disease, but no parent of a vaccinated child stated that it died subsequently of small-pox. In one village (Urgaum) the Tullatee insisted that though the children vaccinated in the year 1866 had not died of small-pox, he was sure that other children vaccinated in previous years had died of the disease. One villager was named whose children were said to have so died; this man was sent for, and, in the presence of the Tullatee, the Patel, and the other villagers assembled, he stated that death had resulted not from small-pox but from cholera.

9. As regards the talookas of Amode and Jumboosur, though the Collector's returns do not show any deaths as resulting from small-pox after vaccination, yet in the villages of these two talookas, which I visited for the inspection of work, I made inquiries of the inhabitants whether they remembered any instance in which a child previously vaccinated was known to have had small-pox and to have died of it. The reply to such an inquiry was invariably in the negative.

10. As regards the prevalence of small-pox I was satisfied that it did exist in some villages of the Broach District, particularly in the villages of Sumnee, in the Wagra Talooka, and Seetpoor Tunkaria, in the Broach Talooka. But these villages were almost entirely unprotected by vaccination, in consequence purely of the opposition to it of its inhabitants, who are all Borah Mahomedans.

11. The existence of this disease, however, must not have been in 1866, but in the earlier months of 1867, a time when it was more or less prevalent in the whole of Guzerat—as seems probable from the following particulars of Seetpoor Tunkaria, a large and populous village. Our Vaccinator went to work there in the months of July and August 1866, and could only succeed in vaccinating 89 children; a great many were left unprotected, because the majority of parents ignorantly, and, as they themselves admitted at the time of my visit, foolishly, refused to allow the benefit of vaccination to their children. Small-pox subsequently broke out in this village. The few children who were protected in the previous year were found to resist the influence of *Devi Matta;* so when our Vaccinator again went to this village in the month of March 1867—probably the time whem small-pox had already broken out, and had taught the villagers a good lesson—he was overcrowded with work, for between March and April he vaccinated 151 children.

12. The more one inquires into this subject the more it becomes clear that small-pox breaks out only in such villages as have hitherto resisted the introduction of vaccination in to them. Even at so recent a date as December last, it broke out in two large villages of the Jumboosur Talooka, viz., Sarode and Kavee,—villages thickly inhabited by Borah Mahomedans, who had in previous years hindered vaccination. In these villages also, on the recent breaking out of small-pox, vaccination was had recourse to by the villagers eagerly. The breaking out of small-pox in a village where vaccination is freely permitted has not yet been known.

13. From these inquiries it appears to me that there is no reasonable cause of apprehension regarding the work of our Vaccinators.

SIND CIRCLE.

Superintendent.—Surgeon J. PIKERTON, M.D.

Establishment.—Seventeen Vaccinators under Government, thirteen Local, and one under Native Chiefs.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government..	1866.....	44,126	....	....	40,970	92·8
	1867.....	33,821	....	10,305	32,353	95·6
Local	1866.....	23,594	....	....	21,300	90·3
	1867.....	21,854	....	1,740	21,022	96·2
Native Chiefs.	1866	975	....	....	820	84·1
	1867.....	2,529	1,554	....	2,297	90·8

The progress of vaccination in Sind continues to be satisfactory. There is a considerable decrease in the total number of vaccinations in the past year as compared with 1866.

The decrease in the Government Return is	10,305
Ditto Local ditto	1,740
	12,045
The increase in the Khyrpoor Return is	1,554
Total Decrease	10,491

It is to be remembered that in the year 1866 the number of vaccinations was the highest ever obtained in any year. When the local establishment was formed, I entertained the belief that for a few years the combined operations of the Government and

local establishments would exceed 60,000 per annum; for the first two years after the creation of the local establishment, viz., 1865 and 1866, the total vaccinations did considerably exceed that number, being respectively 62,415 and 67,720; but the arrears of unprotected children in the province have been worked up faster than I anticipated, as is shown by the decrease in the past year. The chief cause of the decrease, then, is the reduced number of unprotected persons in the province; but there is also another reason which deserves notice: it is that many thinly-populated parts of this Circle have been more carefully gone over than it was formerly possible to do with the inadequate number of Vaccinators in the Government establishment, and the men employed in those parts have done much less work than in former years. Still I am not quite satisfied with the amount of work done by the Government establishment, and think a few of the Government Vaccinators could have done more work by a little more exertion. I shall endeavour to stimulate them to exert themselves more during the present year. I am quite satisfied with the quantity of work done by the members of the local establishment.

2. I think it worth while to say something here on the subject of the numbers which, I think, may be annually available for vaccination in Sind in future years. I may say that this question has engaged my best attention, and during the last five years I have been gathering information to arrive at a conclusion on this subject; but to enable me to give a correct answer to it, I should require much more precise information than is at present obtainable from any source whatsoever; in fact, precise information does not exist. However, my own knowledge of the province is now considerable, and I have received such information as the Revenue and Political Officers are able to give me. To start with then, I estimate the population of Sind, including the Khyrpoor State, at 2,500,000. But the populations of the Sudder Stations are not vaccinated by my men; there is a Vaccinator under each Civil Surgeon, who provides for the wants of his station; the medical subordinates in charge of Dispensaries vaccinate in the towns where they are stationed. His Highness Meer Ali Murad has his own Vaccinator; the Kotree Municipality maintains a Vaccinator for Kotree and its environs, and there are some vaccinations done at the Civil Hospital of Jacobabad; these combined provided for about 500,000 of the population, thus leaving 2,000,000 to be provided for by my Vaccinators. The annual births in a population of 2,000,000, taking the birth-rate at 1 in 30 per annum, should be 66,666. But it is quite impossible to vaccinate all who are born, because there are (*a*) still-births; (*b*) deaths which occur in (say) two years, that is about the space of time which should elapse between the visits of the Vaccinator; (*c*) children protected by natural small-pox; and (*d*) children who from various causes do not come under the influence of the Vaccinators. I do not think I over-estimate these at ten per cent.; thus reducing the available children for my establishments to 60,000 per annum: and now that the arrears have been worked off, it is probable that this is the maximum average number that can be annually, for any given series of years, vaccinated by the men under me. And, arguing in the same way, the average maximum total of vaccinations, from all sources, in the

province should be 75,000 per annum. But I do not expect that the maximum will be constantly obtained in future years, for it never has been in years past. The area of Sind, by recent returns obtained from the Revenue and Political Officers, is shown to be 52,555 square miles; and, taking its population at 2,500,000, it has an average of 47·5 persons to the square mile. The mass of the population, however, is located within twenty miles of the river Indus, on both banks, so that the talookas at a distance of more than twenty miles from the river are much less populous than the average above mentioned: for instance, the Thur and Parkur Talookas contain about 15,000 square miles, and have only a population of about 200,000, or 13 persons to the square mile: again, in Kohistan there are 2,693 square miles, and 2,645 inhabitants, or less than one person to the square mile: and in the Kurrachee Talooka, there are 1,292 square miles, and, exclusive of Kurrachee town, only 7,199 inhabitants, or 5·5 to the square mile. If we exclude these very thinly populated parts from the averages, the rest of Sind has about 70 persons to the square mile. To work steadily over the province I have thirty Vaccinators; they can go over it in about two years or thereabouts. I do not think it would be advisable to go over even the more populous part, oftener than every eighteen months, because, in such a thinly populated country, it would, in many places, be difficult for Vaccinators to keep good lymph going, on account of the number of vaccinated children being too limited to ensure always vaccinating from good typical vesicles; I think, indeed, that two years is about the space of time which should be allowed to elapse, at present, between the visits of the Vaccinator. When the population shall have reached 4,000,000, then it may become advisable to go over the more densely populated parts of the province every year. It appears, then, that the annual births in the talookas gone over by my Vaccinators may be estimated at about 66,666; but this number is diminished by the unknown quantities,—(*a*), (*b*), (*c*), and (*d*),—and there are no means of knowing exactly what these amount to, but I have roughly estimated them at ten per cent., thus reducing the 66,666 to 60,000. I feel sure it would be vain to expect the Vaccinators to reach the maximum yearly, but some years they may obtain it, or even exceed it as they did in 1865 and 1866; but the chances of the Vaccinators vaccinating the maximum is diminished with the diminished arrears of unprotected persons in the province; still, as the population is increasing, the actual number of vaccinations should increase also. The next question which presents itself for consideration, is, what relation should the number of Vaccinators bear to population and area? In considering this question, the population part of it may be put on one side, for no part of the province is yet so thickly populated as greatly to affect the capacity of a Vaccinator to go over it in a reasonable time; the question here is one purely of how many square miles a Vaccinator can work over in about two years. Sind, exclusive of the Khyrpoor State, contains fifty-three talookas, and, speaking generally, one Vaccinator for every two talookas is sufficient; there is thus an average of about 1,752 square miles for each Vaccinator to go over in two years, and the average maximium work of each, if attained, should be about 2,000 vaccinations per

annum. But, as I have already said, we can hardly expect the Vaccinators to reach the maximum: it is more probable that the general average will be something less than 2,000. From these calculations, it appears that twenty-seven regular working Vaccinators are sufficient for Sind with its present population. The Government establishment consists of seventeen, and the local establishment of thirteen, making a total of thirty Vaccinators: but two are employed superintending the others, in addition to their ordinary duty, and are not, therefore, attached to any particular talookas; they, moreover, go over the whole of a collectorate. Excluding them, there is still one more than the requisite twenty-seven; but as the junior Vaccinator is nearly always only a beginner, I cannot calculate on his having charge of a talooka. The joint establishment then is, I think, as far as the number of Vaccinators is concerned, sufficient for the province at present. But I am of opinion that a third Assistant Superintendent would add to the efficiency of both establishments, as it would enable me to have one Assistant for the Kurrachee Collectorate, including Kohistan, another for the Hydrabad Collectorate and the Thurr and Parkur Political Superintendency, and a third for the Shikarpoor Collectorate and the Frontier of Upper Sind Political Superintendency.

The more I see of our system of vaccination the more am I convinced that Sir George Clerk's idea, of employing Native Deputy Superintendents to assist the European Superintendents, was wise and correct; and the carrying of it into practice would, I believe, bring the several vaccination establishments to a degree of efficiency never yet reached even in the Bombay Presidency, where so much has been effected without their assistance. It seems a waste of time to argue in favour of Native Assistant Superintendents, for the thing stands self-evident, that no single unaided European Officer can exercise a continuous watch over men scattered over fifty or sixty thousand square miles. And here I may be permitted to say, in advocating the employment of Native Assistant Superintendents, that Sir George Clerk's idea, although a wise one, was marred, and ultimately rendered futile by employing Sub-Assistant Surgeons as Deputy Superintendents. Native medical gentlemen are the last men whom I should choose for Assistant Superintendents of Vaccination; they would probably be fitter for the place of Superintendents: anyhow Sir George Clerk's plan, of solely employing Sub-Assistant Surgeons, signally and completely failed. Still this failure by no means implies that a plan for employing other natives would also fail. Head Vaccinator Hassah Mull has been three years, and Vaccinator Assoo Mull has been nearly two years, my Assistant; and I am happy to say that I have found them useful to a degree I had not even anticipated. I may be permitted then to say, that I think Native Assistant Superintendents should be employed in all Circles of Vaccination, and that good men, chosen from among the Vaccinators themselves, should be promoted to Assistant Superintendentships; this would open up careers for young men entering the Vaccination Department, and would do more than anything else I know of to stimulate Vaccinators to work well, to render honest returns, and to maintain their integrity in all relations with the people among whom they work. In conclu-

ding this subject, I would beg to recommend that a grade of Native Superintendents to assist the European Officer be made in all establishments. It is worthy of note that when Surgeon Pearson, some years ago, adopted the Bombay system of Vaccination in the North-Western Provinces, he did not fail to strike the one blot in our system, and he included in his establishments a grade of Native Assistant Superintendents.

4. In the opening paragraph of my Report on the progress of Vaccination in Sind for the year 1866, I mentioned that only one small part of the province then remained a virgin field for the Vaccinator; that part was Veerow. I am happy to be able to say that Assistant Vaccinator Lulloo (a Mussulman), when sent there last September, found no difficulty in persuading the Koso Beloochees to accept vaccination, and he vaccinated a considerable number of persons in the hills and dells about Veerow, although Assistant Vaccinator Jettah Mull (a Hindoo) had a few months previously been unable to succeed among those Koso Beloochees. No part of Sind now remains unvaccinated.

5. It is again my pleasing duty to report that I and the Vaccinators have, throughout the past year, received every assistance from the Revenue and Political Officers in the province. I had particular occasion to call on Captain Bolton, the Deputy Collector of Mahomed Khan's Tanda District, to use his influence to suppress the practice of inoculation in his district. I would beg to express my thanks to him for the kindly manner in which he responded to my request. Nothing could exceed the great interest which Major Tyrwhitt takes in the spread of vaccination in the Thurr and Parkur; and I can only thank him again for the attention he gives to the subject, and for the assistance he has so often and so effectually given me. Nearly all the Revenue and Political Officers are either my superiors or equals in rank, and I may not presume to praise their conduct; but I heartily thank them for their ready help, without which my utmost exertions would indeed be of little avail.

6. In the month of April last, Colonel Sir Henry Green asked me to lend a Vaccinator to His Highness the Khan of Khelat. On submitting the request to the late Commissioner Mr. Mansfield, he gave me his sanction to lend a local Vaccinator to His Highness. Accordingly, Kishen Chand was sent by Sir Henry Green to Khelat, where he was employed for some time; but he found the people there object so strongly to his taking lymph from the vesicles, wherewith to vaccinate other children, that he could not keep his lymph going, and it appears that His Highness the Khan was unwilling to force his subjects to allow lymph to be taken from the vesicles. Kishen Chand informed me that there were no objections to vaccination; that, in fact, they were glad to have it; but that the objection to allow the lymph to be taken from the vesicles was insurmountable. Colonel Sir Henry Green considered it a good opportunity for showing the benefits of vaccination to the people of Khelat, and for introducing the practice among them. It may be hoped that the benefit derived by the few hundreds whom Kishen Chand vaccinated may yet induce His Highness to entertain Vaccinators of his own. If I thought my presence in Khelat could

influence His Highness to keep up Vaccinators, I would most willingly go there, and try what I could do; but after the recent trial, I fear some time must elapse before I could do much good.

7. The following are a few causes of the decrease in the number of vaccinations performed by some of the Government Vaccinators: 1*st*. Jettah Mull, Wuttun Mull, and Nubby Bux were employed in thinly populated talookas; 2*nd*. One Assistant Vaccinator was dismissed the Service for being absent from his talooka without leave; 3*rd*. Thackoordass lost one month's work by being prevented from returning to his talooka from privilege leave during the time intercourse was forbidden with Upper Sind on account of the prevalence of cholera there. But the chief reason of the decrease is, as already stated in the opening paragraph of this Report, the diminished number of unprotected persons in the province.

8. The Government Vaccinators vaccinated 18,661 males and 15,160 females, being 55·17 and 44·82 per cent., respectively. The local Vaccinators vaccinated 12,020 males and 9,834 females, or 55·0 and 44·99, respectively, in each hundred. The Khyrpoor Vaccinator vaccinated 1,409 males and 1,120 females, or 55·71 of the former and 44·28 of the latter in every hundred. On the total, the percentage of males is 55·29, and of females 44·69. This is nearly the same proportion as the sexes bore to each other in the Report for 1866; the difference being only 0·40 less of males, and the same fraction more of females, this year in every hundred.

9. The following shows the percentages of the castes vaccinated by three Establishments:—

Castes.	Government.	Local.	Native States.	Average.
Christians	·002	;004	·03	·012
Hindoos	13·37	11·07	22·14	15·53
Mussulmans	78·22	82·8	76·07	79·03
Parsees	....	....	....	....
Other Castes	8·40	6·09	1·73	5·40
Totals....	99·99	99·96	99·97	99·97

The most important feature in the foregoing table is the great increase of vaccinations among Hindoos,—15·53 per cent.,—being far more than in previous years, and is probably fully more than the proportion Hindoos bear to the rest of the population of the province. In former years it was a constant source of regret that Hindoos were generally averse to vaccination, but this shows that their aversion is disappearing; though it still is a fact that many Hindoos do object to vaccination, and prefer to accept the "dispensation of Providence" to using any precautions against small-pox, either by way of vaccination or variolous inoculation: indeed, it would seem that many are rather glad when their children take small-pox. Last hot season I saw a

young child with confluent small-pox in a bunyia's house in the midst of the town of Kotree; the child was in a *pingah* (a kind of swinging cradle), and in the same cradle there were two other children who had never suffered from small-pox, nor had ever been vaccinated. The father and mother only submitted the two unprotected children to the Vaccinator on my bringing the case to the notice of the Magistrate. Again, a few days ago, my 1st Assistant brought to my notice that local Vaccinator Ramzan had received eight annas from each of two bunyias to let off their two children from being vaccinated, when he was vaccinating in their village of Meeranshah, in the Mehur Talooka.

10. There were 19,027 persons vaccinated under one year old, and 39,177 above that age. This gives 31·2 per cent. of the former and 68·7 of the latter, being 8·5 per cent. more under one year old than 1866. It is unquestionably of great importance that children be vaccinated early in life; but it seems to me that the importance of vaccinating children under one year old has been too much advocated, and it is not without very strong reasons and much thought on the subject that I put forward this opinion, opposed as it is to the best authorities in England, and to the views again and again expressed by the Heads of my Department in their annual reports on Vaccination; but my experience has led me to the belief, which was arrived at sixty years ago in some parts of Germany, that children under one year old are less susceptible to small-pox and vaccination than children over that age. In Bavaria, this belief has in a measure regulated the period of life, stipulated by law, at which vaccination must be practised. The law in that country since 1807 (Bavaria was the first country in which vaccination was made compulsory) compels all children to be vaccinated between the 1st of May and end of July who were born in the previous calendar year; *i. e.*, excepting such as are ill and unfit for vaccination; there must, therefore, be a large number vaccinated above one year old. In the "blue book" on the history and practice of vaccination, presented to both Houses of Parliament in 1857, Mr. Simon, in a note at page XXXII., thinks that the full susceptibility to small-pox is developed most in the second and third years of life; and I presume that susceptibility to vaccination is also greatest at the same time. But I am absolutely certain that the susceptibility to vaccination increases from birth to three years of age. When I examine on the eighth day after vaccination the children of a village among whom there is a number of infants under one year old, there is certain to be a considerable proportion of them requiring re-vaccination, whereas those above one year old seldom fail to be successful on the first vaccination. Again, the "insertion success" is very much less among very young infants than among children of two or three years old. Take, for instance, twenty children under one year old—say ranging from one to twelve months, and twenty above that age—say ranging from thirteen months to three years; let all the conditions under which they are vaccinated be the same, as far as the conditions are controllable, and the certainty is that there will not be above half as many good vesicles on the arms of the younger lot of children as on the older, supposing all to have three insertions in each arm. During the last five years I have examined (up to

this date) the vesicles, or their cicatrices, on the arms of nearly fifty thousand persons; and as I have invariably made it a rule to see several days' lymph of each Vaccinator when I have been examining his work, I have seen in the fifty thousand a large number with the vesicles on the arms on the eighth day after vaccination. During this experience, I have often noticed that infants of only a few months old are less susceptible of vaccinatian than older children; taking this in conjunction with the lesser susceptibility to small-pox also, it appears to me to be unnecessary to urge very strongly the vaccination of infants under one year old. As a rule, in Sind the people do object, though not much, to vaccinate very young infants, except when small-pox is present, and then they bring them readily to be vaccinated, although only a few days old. For statistical purposes, I am of opinion that our present Vaccination Form should have three columns of ages,—(*a*) under one year, (*b*) above one and under two years, and (*c*) above two years. I think there were about thirty persons in every hundred vaccinated last year above two years old, and about seventy per cent. under that age.

11. The following Table shows the results of the operations performed last year:—

Establishment.	Percentage of.			Total.
	Successful.	Unsuccessful.	Doubtful.	
Government	95·64	1·05	3·28	99·97
Local	96·19	1·35	2.44	99·98
Native States	90·82	7·5	1·62	99·98
Average 1867	94·22	3·31	2·44	99·9
Do. 1866	89·05	4·99	5·9	99·8
Increase	5·17	....	.....	.. ..
Decrease	....	1·68	3·46	.. ..

The prominent feature in this table is the large increase of successful cases last year as compared with 1866; the chief reason of which is that the Vaccinators, having done less work, were able to ascertain correctly the result in a greater proportion of cases than in 1866. I consider this high success some compensation for the diminished number of vaccinations last year. I have always maintained that the quality of the vaccinations is of more importance than the quantity of them. It is our duty to see that all operations are as perfect as possible, for we have, in a manner, thrust vaccination on the peoples of India; and if we ever win the affections of the masses to vaccination, it must be by virtue of the success of our operations, and not by the quantity of them. Last year I examined 7,437 vaccinated persons, and of these only 134 were unsuccessfully vaccinated, or 1·8 per cent.: this closely agrees with the returns of the

Government and local Vaccinators, in whose returns there is a percentage of 1·17 unsuccessful. Nothing which I could write in praise of the care with which the Vaccinators operate could add to this. In no part of the world is it excelled by more than a fraction of percentage, and in few parts of it equalled. The very high rate of success which has obtained in Sind for the last ten or eleven years is, I consider, due to,—1*st*, the practice of vaccinating from arm to arm ; 2*nd*, the large number of each Vaccinator's operations affords great scope for choosing typical vesicles from which to operate ; and 3*rd*, the skill of the Vaccinators in no small measure contributes to the high rate of success.

12. The condition of the lymph, with one or two exceptions, has been good throughout the year. Two Vaccinators were found working with deteriorated lymph, —lymph which on the eighth day after vaccination had not developed sufficiently large vesicles, though their shape was good enough in most cases : on the tenth day, they obtained the size which good visicles obtain on the eighth. I replaced the deteriorated lymph by good at once. The cause of the deterioration was the careless manner of vaccinating practised by Purtab Rai. He said he had been ill of fever and unable to vaccinate on the eighth day, about a month before my arrival at Nowshera. Sickness is a good enough excuse for doing no work at all, but unfortunately it is one that can be given at any time, and almost under and circumstance ; but it is no excuse for working with deteriorated lymph, and good can always be got for the asking. The other man was Wuttun Mull, who had just three weeks before my visit got lymph from Purtab Rai, and taken it across the river Indus from Nowshera Talooka to Dadoo Talooka ; as a matter of course the lymph was not good, yet it was better than Purtab Rai's. This illustrates a singular fact which I have frequently observed in the last five years ; viz., that deteriorated lymph, producing too small but characteristically shaped vesicles, can, by selecting the most typical from which to vaccinate other children, be improved. Still, deteriorated lymph ought always to be abandoned at once, because, while improving it by selection, there must be an unusual number of unsuccessful and doubtful cases such as I observed in the work of Purtab Rai and Wuttun Mull.

13. Capillary tubes have been occasionally used for starting work in the districts by the Vaccinators when moving from one field to another. Lymph has been supplied in them to all the Dispensaries in the province, to Surgeon Moore for the use of the Dispensaries in Rajpootana, to the Deputy Inspector General of Hospitals in this Division for use in the Abyssinian Force, and to the local Superintendent of Vaccination in the Bombay Circle. It is very difficult to keep lymph good in tubes, or, indeed, in any other artificial method, in Sind during the very hot and dry months of April, May, and June. With regard to this, I may notice a peculiar and inexplicable incident. Last hot weather I had some tubes charged in Doaba and used next morning in Kotree, which produced very small and badly formed vesicles, out of the same lot of tubes ; a few were sent to Dr. Turnbull, Superintendent of Vaccination in the Central Circle, and were used by him near Ahmednuggur, and proved quite successful. The difficulty of keeping lymph good here in the hottest months, either in tubes or

on glass, has often struck me as being unusually great. I have noticed in Lower Sind that, immediately the sea breeze gets soft in the hot months of July, August, and September, when the wind blows from the sea, the difficulty is much lessened, and in the cold months it entirely disappears.

14. Small-pox was spread and kept going for some months in the Mahomed Khan's Tanda District by several inoculators, and there is some reason to believe that it was propagated in another district. Among the rural part of the population there was very little small-pox. In several towns, the larger portion of whose inhabitants are Hindoos, there were severe outbreaks; for instance, in the towns of Manjanda and Nowshera. The first information which I received of the existence of small-pox in Manjanda was on the 24th ultimo, and three days afterwards Jettah Mull commenced vaccinating there. He has informed me that the disease has existed for the last eight months in that town; that there had been 182 attacks and 44 deaths, or 24·2 deaths in every 100 attacks; and that not one of the hundred and odd children whom he vaccinated there last year had been attacked. I will not comment on the carelessness or indifference of the Mooktiakar, in not reporting to me the existence of small-pox at the commencement of the outbreak. I could then, as easily as eight months later, have sent a Vaccinator at once to Manjanda; but while I will not comment on such apathy, I may, and do, regret the frightful waste of human life resulting from it, and I regret it the more the more I think of the thinnesss of our population. The inhabitants of Manjanda are chifly Hindoos, and are undoubtedly themselves chiefly to be blamed, for had they chosen they could all have been vaccinated last year when Jettah Mull was working there. In the town of Nowshera, whose inhabitants are also chiefly Hindoos, there has been a good deal of small-pox, and it is still difficult to get the inhabitants to submit their children to vaccination. In both towns the disease is reported as having disappeared. I have just received information of a considerable outbreak of small-pox in Larkhana District, in which I have four men at present, who at once commenced operations at the several places where the disease has appeared. The affliction of the contumacious Hindoos is still a living evidence of what this province would suffer from small-pox, were it not for the beneficent protection of vaccination enjoyed by the vast majority of the population under fifteen years of age. The following shows the number of monthly returns in which small-pox was reported in the districts named:—

Nowshera,	9 months.	Chiefly in the Hindoo town of Nowshera.	
Mahomed Khan's Tanda,	6 do.	Kept up by inoculators.	
Halla,	5 do.	Very few cases.	Do. suspected.
Shabunder,	5 do.	Do.	
Doaba,	4 do.	Do.	
Jacobabad,	4 do.	Do.	Chiefly in the town of Jacobabad.
Roree,	3 do.	Very few cases.	
Shikarpoor,	2 do.	Do.	

Larkhana,	2 months.	Broke out in November, chiefly in the town of Larkhana.
Sukkur,	2 do.	Chiefly in the town of Sukkur.
Thurr and Párkur,	1 do.	Very few cases.

It may seem strange that, with so many Vaccinators, small-pox should have existed so long in a few districts; but the difficulty of getting Hindoos in the larger towns to vaccinate their children, is the sole reason of the disease continuing so long in Nowshera, and in Mahomed Khan's Tanda it was kept up by variolous inoculators. I would also notice that I have now more certain information of the disease than formerly, as I have more Vaccinators to give it in their weekly and monthly reports. As soon as ever a Vaccinator knows of the existence of small-pox any where in his talooka, he goes at once to vaccinate at its seat. On the whole, then, I do not think there was more small-pox in the province last year than there generally has been in years preceding it. To enable me to take immediate measures to prevent small-pox from spreading, I would beg to suggest that a proclamation be issued from the office of the Commissioner in Sind, directing all Revenue and Political Officials, from the highest down to the tappidars, to communicate direct, and at once, any outbreak of small-pox to the Superintendent of Vaccination. I would also beg that a sufficient number—probably 2,000 copies—of the proclamation be printed for distribution among the more influential Mussulmans and Hindoos in all the tappidarates. I append a draft of the proclamation for issue, if approved by the Commissioner of Sind.

15. On the subject of inoculution, I cannot do better than quote from my letter No. 210, dated 15 August last, addressed to the Deputy Inspector General of Hospitals of this Division:—

Paragraph 2nd. "On the 15th February last, a Patel, by name Shukul, wrote to "the Deputy Collector of Mahomed Khan's Tanda, informing him of the presence of "small-pox in his village of Shukul Koso, and asking permission to variolously "inoculate unprotected children. The Deputy Collector sent me Shukul's letter, "and forbade the practice of inoculation on the 23rd February. I endorsed the letter "to Kowrah Mull, who was, and still is, employed in that district, and instructed "him to proceed to the village where small-pox was reported to exist, and to vaccinate "the unprotected children at once. Kowrah Mull, after proceeding to the seat of "small-pox, reported, on the 17th March, that a man of the Mashakhpots caste had "been inoculating for some time, but that he could not learn his name. After making "many inquiries, he learned that Shukul Koso (the man who asked permission to "inoculate) had brought a man named Bachel, of the Mashakhpots caste, to inoculate "in the village of Shukul Koso; and it was after setting small-pox going that Shukul "wrote for permission to inoculate on account of the existence of small-pox "which he himself had produced, or caused to be produced, in his village of "Shukul Koso. Inoculator Bachel lived in the village of Hajee Powar, in the "talooka of Mahobut Dera, in the Mahomed Khan's Tanda District. Kowrah Mull

"also reported that inoculation had also been practised in the villages of Khuda Bux "Gharro, Juro Wasan, Mitto Koso, Rawut Koso, Mussoo, Kashkeli, and Moobarak "Koso. After seeing the inoculated children in these villages, Kowrah Mull request-"ed the Mooktiakar to stop the inoculators from inoculating. On receiving Kowrah "Mull's report, I directed the Head Vaccinator to proceed to Mahomed Khan's "Tanda District to investigate into the affair thoroughly, and to report to the District "Office as well as to me. He went to Mahomed Khan's Tanda District, and, after "making full inquiries, reported that no less than seven men had been inoculating "in that district; he further informed me that some vaccinated children had been inocu-"lated with small-pox virus without any effect, and even some unvaccinated children "did not take small-pox after being variolously inoculated. In the village of Phar-"kara, the Patel told the Head Vaccinator that they preferred vaccination to inocula-"tion, and that for six years they had no cases of small-pox until the inoculators were "brought by Allahdad Nizamoni and Shukul Koso, when they were driven to inoculate "for fear of their children catching the disease naturally from those who had been vac-"cinated, and they have since written to me to get inoculation prohibited. The names "of the inoculators are Kaki Mashakhpots, resident of Yusuf Mashakhpots; Ibrahim, "Tahir, Ahsan, and Yusuf, all of the same caste and village; Bachel, already men-"tioned; and Mahomed Khan Lagari, resident of Lall Buksh Lagari. The seven "inoculators inoculated children in the following villages: Gayandar Koso, Umeed Ali "Thine, Adreez Hallapots, Abdoola Thejo, Lall Buksh Lagari, Kyro Dal, Wassee "Wasan, Mitto Wasan, Meer Mahomed Nizamoni, Kyro Talpoor, Pharkara, Bachel "Hallapot, Shukul Koso, and in some other villlages which the Head Vaccinator did "not visit. On receiving Hassah Mull's reports, I sent the whole of the papers to the "Deputy Collector of Mahomed Khan's Tanda, with a request that he would put a stop "to inoculation (but previous to this the Mooktiakar, at Hassah Mull's request, called "these inoculators before him and admonished them). He put a stop to the practice, "and took the permission to carry arms away from Allahdad, Jagheerdar, for encourag-"ing the practice of inoculation in his jagheer; and he explained to the inoculators "that Government could not permit of the dangerous practice of inoculation being con-"tinued." I can add nothing to the foregoing, except to say that I can see no good reason against making inoculation penal in Sind, seeing there are now plenty of Vaccinators to protect the people by vaccinations. The only real difference which I can see between a death caused directly or indirectly by inoculation and one caused by an assassin, is, in the former case, the absence of intention to kill. I believe the penal code takes intention and malice into greater account than the actual result of an act. This, no doubt, is the correct moral view, and is the general principle on which criminal codes are formed; but in the case of inoculation, the maintenance of this principle is so inexpedient, that the common sense of Europe has condemned it, and, if I am not mistaken, inoculation has been made penal in some other parts of India. I would only just observe further, that it was in Mahomed Khan's Tanda District that a man, by name Boodhoo, was convicted and punished for inoculating in 1866, but the conviction was

quashed by the Sudder Court on the ground of illegality. To the release of Boodhoo I attribute the boldness of the inoculators in the same districts in 1867.

16. My annual tours seem so much alike that I feel half disposed to omit writing a *resumé* of last year's; but I feel that it is due to my establishment to do so, for without it I cannot well show how I appreciate the work of the individual Vaccinators whose vaccinations have been inspected. With this excuse I proceed, and will be as brief as possible. At the opening of the year under report I was in the Larkhana District; there I examined the work of General No. 27 (Luchmon) in three tappidarates of the talooka of Larkhana, and in one tappidarate of the Lubdarya Talooka, and found it very satisfactory; his lymph was good, and records were true. Some work of Peer Bux was also seen, which he did when learning his work under Luchmon. Luchmon has been longer than any other man in the establishment,—over 20 years. He is a native of the Deccan, and on account of being unable to write in the Persian character was superseded by Hassah Mull when the latter was promoted to Head Vaccinator in 1862. Again, although I have been always much satisfied with him, I was unable, for the same reason, to recommend his promotion to an Assistant Superintendentship of Vaccination. On my pointing out the loss he had sustained, he set about learning to write in the Persian character, and is now able to write his own returns and reports in it. I mention this circumstance to show that the Vaccinators are willing to earn rewards if Government will only hold them out. In two tappidarates of Kumbur Talooka, the work of General No. 294 (Jani Mull) was examined. I find in my notes that "the lymph is not very good; the vesicles are well formed, but too small: he has been vaccinating too many children from one vesicle. By the greatest care in selecting and vaccinating, the vesicles would develope themselves better. I vaccinated three children from tube lymph." From this new lymph he subsequently carried on his work. His records were true. In two tappidarates of Ratadehra Talooka, Peer Bux's work was examined; it was very good, but he had entered a number of children in the "above one year" column who were under that age. He will be more careful in future. In other respects, his records were quite correct. Leaving Larkhana District I proceeded into Shikarpoor District, where I examined, in two tappidarates of Shikarpoor Talooka, the work of General No. 286 (Thackoordass). I find in my notes that "he has done very good work, though not very much of it, there not being very many unprotected children in the villages of this talooka." Some old work of General No. 114 (Apoo Mull) was also seen in this talooka, and the marks were very good. Thackoordass' records were correct. In the month of February, I entered the frontier Upper Sind District, and in the tappidarate of Jacobabad, in the talooka of the same name, and in the tappidarate of Ghouspoor, in Sarhad Talooka, examined the work of Kishen Chand, and found it well done, his records true, and lymph good. In the latter talooka, the work of General No. 285 (Hazari Mull) was also examined, and found satisfactory in all respects. From the frontier district I crossed the Indus and entered Roree District, in which the work of Allah Bux was examined in Hussein Beli Tappidarate, in Gotekee Talooka; but as he

was, at the time of my visit, employed in Oobaoro Talooka, his work was more particularly tested in three tappidarates of that talooka. I find in my notes that "he has done excellent work, and the marks are exceedingly good. The Oobaoro Talooka was gone over last year (1866) by General No. 285, so that there are few children to vaccinate, and nearly all under one year old. There have been some cases of small-pox in the town of Oobaoro. I saw one case. I dare say this influenced the people to have *so many* very young children vaccinated. I have told Allah Bux to vaccinate the town of Oobaoro, sharp, to prevent the disease from spreading." His records were true, and I had every reason to be satisfied with such good work by so young a Vaccinator. In the same talooka, some old work of General Nos. 165 and 285 was looked at, and the marks found to be very good. In the talookas of Gotekee, Syudport, and Roree, General No. 79 (Suroop Sing's) vaccinations were found to be excellent in every respect. In the town of Roree I saw two children with good vesicles, who had been vaccinated at the Dispensary. Here I saw His Highness the Meer of Khyrpoor's Vaccinator, who informed me that vaccination is progressing most favourably in his His Highness' territory. Leaving the Roree District I passed through the Khyrpoor State, and on the 1st of March encamped at the boundary town of Kotree in the Khandiara Talooka, in Nowshera District. Here the recent vaccinations of General No. 108 (Mehur Chand) were examined, and his records tested in the usual way, by calling over the names from the nominal roll; his lymph was good, records true, and work satisfactory. Some old work of General No. 114 was also looked at, and the marks were excellent; twenty-four children who had been vaccinated by Purtab Rai in a village were also seen to have good marks. When at Hallani on the 2nd March, I received instructions to stand towards Kotree, to be in readiness to relieve Assistant Surgeon Colvill of the Civil Surjeoncy there. I accordingly marched down as rapidly as possible, and received temporary charge of the duties of Civil Surgeon at Kotree from Assistant Surgeon Morton, who in the meantime had relieved Mr. Colvill. I took charge on the 11th March, and after about two months delivered over charge to Dr. Williams. About the end of March I went down the railway to Joongshaie, to meet the Commissioner, to speak to him about the inoculators in Mahomed Khan's Tanda. During the month of April, the Kotree Municipality's Vaccinator's lymph deteriorated so much that I had it replaced. In May I examined some work of General No. 142 (Chellah Ram) in Fazl Khan's Tanda Tappidarate, in Doaba Talooka; the lymph was good, but there were a few errors in his register; for instance, one name entered twice. I informed him that such errors must not occur. In the month of June the work of General No. 77 was examined in the Bheem Tappidarate of the Kotree Talooka, and his lymph, notwithstanding the heat, was as good as I ever saw in my life. Jettah Mull is an old Vaccinator, and, under all circumstances, always has good lymph and well formed vesicles. He has in my time often been found fault with; but I will say, that, as a Vaccinator, he is unsurpassed, or even equalled, by very few. I was much satisfied with his work, and his records were true. In the month of July I examined General No. 148 (Lalloo's) work in

the tappidarate of Muthari, in Halla Talooka, and in the tappidarate of Mussoo Tanda, and found it well done, his lymph good, and records true. This Vaccinator's work is always excellently done, and wherever there is any difficulty to get over, I have only to send Lalloo to overcome it. He ingratiates himself with the people wherever he goes, and is always hailed by the villagers among whom he works, with every expression of good-will and friendship, although only an humble and illiterate man as compared with the Amils (Hindoo Moonshees) of my establishment; still I look on him as the type of what a Vaccinator ought to be,—conciliating, kind, and even gentle in his manner and intercourse with all. There are two of his brothers also Vaccinators, one of whom is in the local establishment, and they are all three much the same kind of men. One of them, General No. 199 (Allah Bux), I noticed in one of my former annual Reports was presented with a lungi (a kind of scarf or shawl) by Major Tyrwhitt for good work and conduct. In the months of August and September, some work of Majlis Rai was examined in Kotree; and in the former month, Lalloo took lymph from Kotree to work his way to Veerow, to try and overcome the opposition and difficulties unsuccessfully encounted by Jettah Mull. His own humble account is, that he went, and neither met with opposition nor difficulty; and yet the Koso Belooches there threatened to stone a Vaccinator some years ago. At the end of September I went out to Veerow, and found him working pleasantly with the people, many of whom he had already vaccinated, and with whom he was on the best possible terms. After that, he remained another month working among the Koso Belooches, by which time many of them were leaving for the plains to work at the harvest. At the end of October, he suggested that he should be sent to another talooka, and return earlier to the hills next year, at about the beginning of July, when there are more people in the hills grazing their cattle during the inundation months. I adopted his suggestion, and sent him back to Doaba Talooka. In October I again saw some work of Chellah Ram's in Hoosri Tappidarate, in Doaba Talooka, and found it well done. On Lalloo's return to Doaba, Chellah Ram returned to Oomerkote Districts, carrying lymph with him in capillary tubes. In November, Chanderam's work was examined and closely tested in five tappidarates of Alliyar-ka-Tanda Talooka, and found very satisfactory; his lymph was good, records true and very neatly kept. I also saw some children in the town of Alliyar-ka-Tanda, who had been well vaccinated by Mr. Apothecary George. In the tappidarate of Shahji Bit, in the Halla Talooka, I examined the work of General No. 199 (Allah Bux), and found it everything I could desire. Some works of General No. 77 were also examined here, and found very satisfactory; his lymph in Old Halla was very good. No work was going on at the Dispensary in New Halla, but I brought a child with good vesicles from Old Halla for the Hospital Assistant to commence operations from. From the Halla District I passed up to Nowshera District, and in Sukkrund Talooka saw a few children who had been vaccinated by General No. 78 (Hassah Mull). In December the work of General No. 108 (Mehur Chand) was most thoroughly examined; two days' lymph was good, but one day's was not so: it was abandoned. His work was

very good, and his records correct. After completing the examination of Mehur Chand's work in the Sukkrund Talooka, I proceeded to Nowshera Talooka to inspect the work of Purtab Rai, which I found very unsatisfactory: his lymph was all deteriorated; I made him abandon it, and ordered him to go over again, after getting good lymph, the whole of the preceding month's work, to re-vaccinate all children whose marks he should find imperfect. Taking Purtab Rai with me, I crossed the Indus and entered Sehwan Districts, and in the Dadoo Talooka inspected the work of General No. 250 (Wuttun Mull). This Vaccinator, about three weeks before my visit, had taken lymph from Purtab Rai, and, as a matter of course, it was also deteriorated, yet it was better than Purtab Rai's; in fact, one day's was tolerably good. Without delay, I went on to Sehwan, and there inspected the lymph of Rughu Mull, and found it excellent; from it I gave Purtab Rai a good supply of lymph in vesicles on a boy's arms, which he took across to Nowshera District. I also charged some capillary tubes from it, and sent them by Rughu Mull to Dadoo, to start good lymph for Wuttun Mull. I was very much displeased with Wuttun Mull for not reporting the deteriorated condition of Purtab Rai's lymph. Rughu Mull's work was very satisfactory, and his records correct. At the town of Sehwan I saw two children who had been vaccinated by Mr. Apothecary Pollard. He said that he had great difficulty in getting the Hindoos to submit their children to be vaccinated. Rughu Mull had vaccinated sixteen children in the town of Sehwan, and he confirmed Mr. Pollard's statement regarding the difficulty of getting children to operate on in the town. From Sehwan I again crossed the Indus, and came into Nowshera District, where some more recent work of General No. 108 (Mehur Chand) was examined, and found to be everything I could desire. Returning to Old Halla, I saw there a few children who had been vaccinated at the Dispensary by Hospital Assistant Daniel since my previous visit.

17. During the year under report the work of General Nos. 27, 294, 286, 285, 79, 108, 142, 77, 148, 199, 250, and of local Vaccinators Peer Bux, Kishen Chand, Allah Bux, Purtab Rai, Chandiram, and Rughu Mull was closely examined, and their records were closely tested. The work of General Nos. 114, 165, and 78 was examined, but records were not tested; as also was the work at the Dispensaries of Roree, Alliyar-ka-Tanda, Sehwan, and Halla: total, 20 Vaccinators, 4 Subordinates in charge of Dispensaries, and one Municipality's Vaccinator's work was examined by myself.

Hassah Mull, 1st Assistant Superintendent, examined the work and tested the records of General Nos. 165, 142, 195, 77, and of local Vaccinators Chandiram, Rughu Mull, Chellah Ram, and Ramzan: total 9 Vaccinators' work. He also inspected the lymph at Mahomed Khan's Tanda, Alliyar-ka-Tanda, and Sehwan Dispensaries. He travelled 1,200 miles, and examined 1,400 recently vaccinated persons in 87 villages. Assoo Mull, 2nd Assistant Superintendent, examined the work and tested the records of General Nos. 246, 295, 165, and of local Vaccinators Tejoo Mull, Walliram, Sookanund, Rughu Mull, Rama Chund, and Sotaldas: total 9 Vaccinators' work inspected. He also inspected the lymph at Tatta and Meerpoor Buttora Dispensaries. He travelled 2,088 miles, and examined 2,453 vaccinated persons in 273 villages. Thus

myself and Assistant have travelled 5,441 miles and inspected 12,464 vaccinated persons in 695 villages during the past year. Every Vaccinator's work has been examined except one, and the work of several Vaccinators has been examined more than once.

18. Neither myself nor the two Assistants discovered a single instance of falsification of records, although 8,671 names were called from the Vaccinators' Registers.

19. The means of obtaining statistics regarding small-pox do not at present exist in this province: without a system of village registration, or perhaps a system of registration in each *Deh*, it will be impossible to get any thing like even approximately correct statistics of births and deaths, or of any diseases. However, as I said in my Report for 1863, I may say more emphatically again, that the faces of the younger part of the population are living proofs of the benefits of vaccination; and the pitted faces, the blind, the halt, and the lame among the older, affords ample evidence of how small-pox ravaged the country in years gone by. And again, the remarks which I have made on the outbreak of small-pox in the Hindoo town of Manjanda, where there died about 25 per cent. of the people attacked, still show how deadly small-pox is.

20. The conduct of the Vaccinators has been generally very good; still I have had to find fault with two for working with deteriorated lymph. One was dismissed the service for being absent from his talooka without leave. No complaints were made against any Vaccinator during the past year, except one; and as Major Trywhitt has not yet completed the investigation into it, I will only say that it refers to a Vaccinator not having paid enough to the parents of two children taken for vaccination purposes from their own to other villages. The foregoing gives, I trust, a fair account of the progress of vaccination, and of the working of the Government and Local Vaccination Establishments, in Sind.

KATTIAWAR CIRCLE.

Superintendent.—Surgeon E. R. Butler, M.D.

Acting Superintendent.—Assistant Surgeon A. M. Blomfield.

Establishment.—Eight Vaccinators under Government and thirty under Native Chiefs.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1866	6,563	....	....	6,417	97·8
	1867	7,829	1,266	....	7,550	96·4
Native Chiefs ..	1866	26,759	....	....	24,878	93
	1867	32,046	5,287	....	29,807	93

1. Three Government Vaccinators were dismissed during the year for misconduct; the places of these have been filled up by men who have been instructed under my personal superintendence.

2. One acts as Carkoon to the Superintendent, a duty which he performs remarkably well. He has taught himself English, never having been to school, and he reads and writes it well. He has the entire conduct of the Gujerathi correspondence, which is very considerable, and requires an intimate acquaintance with the various districts of the province. He receives no remuneration beyond his pay of 20 rupees per month, with which he is obliged to support his family, and keep a tattoo, which is absolutely necessary for him when accompanying me on a tour of inspection.

3. The other seven Government Vaccinators have performed 7,829 operations, which is 1,200 in excess of last year, but still falls far short of what they ought to perform. I see in last year's Report that the average of vaccinations performed by each man in Sind is more than double that done in this district, but there I believe each man gets batta when travelling, while here they get no allowance beyond their their monthly pay, which is not sufficient to make them care much about the Service.

4. The percentage of success is put at much too high a figure. I have never seen any work so good except that of the Station Vaccinator, who only brings the successful cases for my inspection.

I have endeavoured to impress on them the fact that a case cannot be considered successful unless two well-marked cicatrices at least remain.

5. Five of them have been instructed in filling capillary tubes, and the other two have been summoned to Rajkote for the same purpose.

6. *Chiefs' Vaccinators.*—Thirty have been employed during the year, and several others will be appointed from the beginning of 1868.

7. The number of operations shows an increase of 5,287 over the previous year, and the average for each man is rather more than that of the Government Vaccinators.

8. Five of the number were discharged for misconduct, and four others took their discharge of their own will; their places have all been filled up.

9. Thirteen have been punished by fines, some of them more than once; this is the only form of punishment that can be inflicted, with the exception of dismissal, and has generally been found efficacious.

10. All whom I have come in contact with have been instructed in filling capillary tubes, and have not been allowed to go out until they have become fully competent. Seventeen of the number have been thus instructed, and are well able to carry on their work; specimens of the lymph with which they are working are occasionally called for, in tubes.

11. The staff of these men would, I believe, be largely increased if the subject were urged upon the Chiefs by the Political Agent. Colonel Keatinge had taken means

to have this effected previous to his departure, and had called upon many of them to appoint Vaccinators.

In a letter which I addressed to Colonel Keatinge in May, on the subject of Vaccination, I proposed that a general fund should be established to which every Chief should subscribe, and the payment and entire control of the Vaccinators should be intrusted to the Superintendent; to this, however, the principal Chiefs would not consent. They agreed to appoint as many Vaccinators as were necessary, and to give the control of them to the Superintendent, but they must be the Chiefs' servants, and paid by them. Still I think that my proposition might be carried out with regard to the petty Chiefs, most of whom now pay nothing; every Chief possessing fifty villages might be called upon to appoint a Vaccinator, while those with less could pay a subscription according to the extent of their territory.

12. With regard to the superintendence of these men, Colonel Keatinge suggested that four Assistant Superintendents should be appointed, each on a salary of Rupees 50 per month, to be paid by Government, and the Government Vaccinators now employed to be discharged. This plan would no doubt increase the returns considerably, which would look very well on paper, but I question if real vaccination would be much advanced by it, owing to the difficulty of finding really trustworthy men to fill the office of Assistant Superintendent; and I believe that nothing can supply the place of personal inspection by the Superintendent, who, if he takes an interest in the subject, and is well supported by the Political Agent, will be able to inspect the work of almost every Vaccinator in the course of the year.

13. There are three principal States in Kattiawar; of these Bhownuggur employs eight Vaccinators, one of them called a Superintendent. I have not yet been able to visit any of these districts; I was on my way there in November when recalled to camp. To judge from the monthly returns, the work is not carried on with diligence; but I believe the Durbar has every wish that it should be so, and will give every assistance.

14. Joonaghur employs three. I cannot report favourably of the work done by these men, one of whom was formerly in Government employ, and is now infirm from paralysis, and unfit for much work. The Durbar has never given me any assistance, but, on the contrary, the Karbaree at Joonaghur refused to help me at all when on my tour of inspection in April, and said it was not the custom to have the children inspected; and the head man at Kotiana, another large town, would not assist me at all. The consequence is, that the Vaccinators do much as they choose, and I have very little control over them. This would doubtless have been remedied had Colonel Keatinge remained.

15. Nuggur formerly employed two Vaccinators, but, at the request of Colonel Keatinge, arrangements were made to increase the number to five, which is almost too small a number to carry on the work properly. At an interview which I had with the Chief, in company with Captain Hebbert, Assistant Political Agent, in the month of

May, it was agreed that four new men should be entertained, and they were to be sent to Rajkote for instruction in the monsoon, the Chief expressing his willingness to do everything in his power to have the process thoroughly carried out in his territory. I accordingly wrote for the men in June, but they did not come until November; this delay was caused by the principal Karbaree, Bhugwanjee Kurrumjee,—who, while professing to take an interest in the subject, and promising a great deal, invariably thwarts the wishes of his Chief,—in this case refusing to allow the Oomedwars any subsistence allowance, or to render them any assistance. Two men, having been instructed, were sent to their districts in December, and another one has lately left Rajkote.

16. Arriving at Rajkote on the 18th of February, I left for the districts on the 26th of March, first inspecting the work of General No. 281, which I found carelessly done; he was supplied with fresh lymph, and warned to be more careful: he has since been dismissed for being absent without leave. I thence passed through the districts of Gondul, Jaitpoor, Joonaghur, Bantwa, and Porebunder, and inspected the work of seven Chiefs' Vaccinators; I found it done in a careless manner, and the lymph in use of a questionable character. One man, whose work was very bad, was at once discharged. The others were supplied with fresh lymph. At Porebunder I remained for a week awaiting the orders of the Political Agent, who was out with a field force, and by him I was directed to proceed to Nowanuggur. Scarcely any inhabitants of the districts through which I passed had been vaccinated for the last three years. At Nowanuggur I found the children well vaccinated in the town and immediate neighbourhood, but nothing had been done at a distance; this the Vaccinator declared was the fault of the Karbaree, who would not give him assistance in visiting the districts. I next went to Jooria, where the Vaccinator had confined his work to the town and neighbourhood, and had taken to cultivation; he was discharged. On my way to Rajkote I inspected some villages which were in charge of General No. 113, Runchore Myaram, and found his returns entirely false; he was discharged. I arrived in Rajkote on the 15th of June. During the monsoon all the Vaccinators within a reasonable distance were called in and instructed in filling tubes. I started again on the 10th of October, first inspecting work supposed to have been performed by the Station Vaccinator during the preceding year; I found scarcely one successful case. I then moved to Chotugla, inspecting work of General No. 103, performed during the monsoon; I found the work satisfactory, but he had neglected to visit many villages in the district. I therefore took him with me and established him at Anundpoor, from which I proceeded to Bandla, a district belonging to the Chief of Nowanuggur, where vaccination had never been performed; I therefore sent for a Government Vaccinator and stationed him there. I next visited Surdhar, inthe Rajkote District, where I found the work done by the Station Vaccinator in a satisfactory manner. I returned to Rajkote on the 15th of November, and started again on the 21st, inspecting the districts of Gondul and Kotra, which I had visited in March of this year. I found the work much better done, most of the cases

being successful. Having received orders to take charge of the 17th Regiment N. I., I returned to camp on the 28th.

My tour of inspection has thus been confined to little more than four months, the greater part of that in the hot weather; I have therefore been able to inspect only a very small part of the province.

17. The lymph that is at present in use was introduced from England in January 1867, on points; one small vesicle resulted, from which the lymph has been propagated and distributed to all the Vaccinators. I have twice received tubes and points sent for by myself, and once, in December, from Government; all these have failed. A small vesicle rose from that supplied in December, but the lymph was not of a good character, and has not been used.

18. Small-pox has prevailed to a great extent in the past year, principally in the earlier part, but many of the cases that I was shown were not small-pox at all; the majority of the children in the villages suffer during the hot weather from some form or other of eruptive disease. Nevertheless the disease has undoubtedly committed great ravages during the year.

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon J. T. Welsh, M.D.

Establishment.—Five Vaccinators under Government, and six under Native Chiefs.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government (Punch Mahals)	1866....	5,833	....	....	5,296	90·8
	1867....	7,967	2,134	....	7,373	92·5
Native Chiefs...	1866....	4,855	....	....	4,741	97·6
	1867....	5,359	504	....	5,054	94·3

In the year 1866 there was an increase of 2,496 in the number of operations performed by the Government Vaccinators in this Circle, and as during the year just terminated there has been a further increase of 2,134, I have now the pleasure of stating that in the course of the past two years the number of vaccinations has been more than doubled: 3,337 children were vaccinated in 1865, and 7,967 during the year 1867.

Last year I had occasion to refer to two cases of falsification of returns; but this year, although I used every means to test their accuracy in all respects, I did not

detect any fictitious names. There were many errors, however, both as regards the age of the children and result of the operation. In future returns, I have no doubt, the age and result will be more accurately recorded.

The percentage of children vaccinated in the Punch Mahals last year, under one year of age, was rather more than 62, but this year the returns only show a percentage of little more than 53. This number is exaggerated, however, as, from notes taken by me while on tour, I found that only 47 or 48 per cent. of children were under one year at the time of vaccination. The figures, of course, vary in the different districts, so that by leaving out the work done by the assistant at Jahalad, they rise to nearly 60 per cent. of operations under one year of age. The assistant at Kálole (who is one of the best Vaccinators), according to his returns, operated on 89 per cent. under one year, but the errors in his returns amounted to 12 per cent. The real percentage therefore is only 77, which, however, is very creditable, considering the district in which he has to work. As the Patels and Talatees, under instructions from Mr. Propert, Agent to the Governor, are now keeping lists of the children, and in other ways assisting the Vaccinators, the people in the more civilised parts of this Circle seldom object to their children being vaccinated in infancy. In Dohud, as vaccination from door to door completely failed this year, the work was solely carried on by means of the Talatees' list, and in that way almost all the children vaccinated (about 200 in number) were operated on when three months of age. In the large towns these lists are very imperfect, and always will be so until some attempt is made to register the births.

The number of successful cases was exaggerated, but not to any great extent.

In February, I inspected the work of the assistants in Jahalode and Loonawara. After inspecting the work of Jethalal Gunputram (General No. 253), Dohud, who always works well and diligently, I resumed my tour in November. Owing to the difficulties encountered by the assistant in Soonth, I was under the necessity of going there instead of proceeding in the opposite direction as I had intended, and on the way again spent some time in Jahalode with Pursotum Dayaram (General No. 279). He had been working well, and the result was everything that could be desired. From Soonth I went to Loonawara, and after examining the work of assistant Vaccinator Chuggun Roopchund in that State, I proceeded to Ballasindore, and inspected his work there. His lymph and cicatrices were, on the whole, good. I next examined the work of Balajee Purbharam (General No. 254), Godra, who is a very hardworking man, and was much pleased with the excellency of both vesicles and cicatrices. The work of Mahashunkur Cassiram (General No. 255), Kalole, was next inspected, and, as usual, was very good. At the close of the year I was in Halole examining the work of Gunputrow Ramchunder (General No. 262): some of the cicatrices were very good, but others were indifferent. Fresh lymph was introduced.

The conduct of all Vaccinators, with one exception, has been satisfactory. Purbhasunker Jeewunram, assistant in Barriah, after giving much annoyance and trouble,

sent in his resignation in the month of September. Mahasook Kudoojee, a candidate from the Northern Circle, was appointed to the vacancy, and joined in November.

A few cases of small-pox occurred in the Dohud Districts during May and June, and in July one or two cases in Chota Oodeypoor were also reported. I met with no case of inoculation.

The lymph throughout the year has generally been very good. Most of the Vaccinators have now learned to charge Husband's capillary tubes, and to vaccinate with the lymph thus preserved.

The civil authorities have, as in former years, taken great interest in vaccination, and given every assistance in their power.

PRESIDENCY DIVISION.

Local Superintendent.—Sub-Assistant Surgeon ANANTA CHUNDROBA.
Establishment.—Six Vaccinators.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	8,866	....	....	6,669	75·2
1867	10,985	2,119	....	8,428	76·7

The past has been a comparatively busier year. During it, besides the usual number of persons from amongst the residents of Bombay, several hundreds belonging to the Abyssinian Field Force have been vaccinated, and many others supplied with large quantities of preserved lymph, in the shape of charged capillary tubes, ivory points, and scabs.

The total number operated upon amounted to 10,985, being 2,119 more than in the year preceding. Of these, 6,279 were males and 4,706 females,—7,402 Hindoos, 1,617 Mahomedans, 966 Christians, 766 Parsees, and 234 of other castes, chiefly Jews; 5,072 under and 5,913 above one year of age.

Of the total operations performed, 8,428, or a percentage of 76·7, were successful, in 1,179 they failed, and in 1,378 the result could not be ascertained.

The lymph in use has been throughout of an excellent quality, being constantly renewed by lymph received from Europe, as well as from the Superintendents of the different Vaccination Circles in the Mofussil.

Great assistance was derived from the charged capillary tubes received from the different Superintendents, as we were thereby enabled easily to meet the requisitions for supplying lymph in large quantities to some portion of the Abyssinian Field Force.

Such of the Force as were vaccinated here gave us abundance of fresh vaccine lymph, with which we could vaccinate every one that applied for vaccination during some of the last months of the past year, but so soon as that source of supply was exhausted we were as badly off for lymph as ever, and it was the greater pity as this want occurred at the very time it was most needed, when, on account of the setting in of the small-pox season, the number of applicants for the operation began to increase.

Nothing short of legislative enactment can meet this kind of emergency, and, in my humble opinion, it behoves the superior authorities to take the subject into their serious consideration. I am fully persuaded that if an enactment making it compulsory to get one's child vaccinated, and, when successfully vaccinated, to allow lymph from it, is passed, it will not meet with any serious opposition from any portion of the community on the score of religion, and this, in my humble opinion, is the only thing worth paying any attention to. My experience, and the experience of every officer of the Vaccine Department, has shown us, beyond any possibility of being deceived, the great eagerness and anxiety shown by almost all classes of the community to get their children vaccinated. The only drawback is in the insufficiency of good lymph wherewith to carry on the operations. Inconvenience and trouble are the only things that could at all seriously be pleaded by anybody against allowing lymph to be taken; and, as matters at present stand, the rich and well-to-do people receive, as they consider it, as a matter of right all the advantages of vaccination without in the least participating in the troubles and inconveniences necessarily attending upon it; for, secure in the knowledge of their being beyond the reach of any molestation from the Vaccinators, they can afford to laugh at their impotent attempts at securing a supply of lymph from the arms of their children. Should the poorer people be vaccinated in preference to these rich folks, they know that they have but to represent the matter to the superior authorities, who, they believe, cannot but take notice of what, apparently, is a great dereliction of duty on the part of the Superintendent. As it is, the richer and upper classes of the community have it all their own way, reaping all the advantages of vaccination at the expense of the poorer and lower classes. I do not see why the convenience of the rich, well-to-do upper classes should be respected more than that of the poorer, lower classes; and as legislative enactment would go far to equalise matters and bring all to a level, it would establish vaccination on a sounder basis, which could not fail soon to extend its benefits over the entire length and breadth, not only of the City of Bombay, but of the whole Presidency; thus holding completely under sway, if not quite eradicating, the fell disease small-pox, which now annually numbers its victims by thousands, notwithstanding the best efforts of the superior authorities.

During the past year we received from the different Superintendents of Vaccination 144 charged capillary tubes, and had, in our turn, to supply lymph to different persons, the Abyssinian Field Force included, to the extent of 484 charged ivory points, 4 pairs of glasses, 121 capillary tubes, and 4 scabs.

The subordinates have all steadily worked on during the period under report.

VACCINATION UNDER CIVIL SURGEONS.

TANNA.

One Vaccinator (Municipality's) under the Civil Surgeon, Surgeon H. ATKINS.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	202	....	....	195	96·5
1867	176	....	26	103	58·5

Since last Report there has been a diminution of the number vaccinated by 26, caused by the Vaccinator being wanting in diligence and perseverance, so necessary in a town like Tanna, where there is much opposition.

In June, in consequence of the small number vaccinated, the monthly numbers, never amounting to more than 20, and frequently being as low as 10, coupled with a large number of failures in those who were brought to me for examination, I was obliged to represent the conduct of the Vaccinator to the Inspector General, with the view to his being dismissed. Since that time no children were vaccinated till November last. The failures (10) this year have been caused in a great measure by the want of care in the selection of typical vesicles to vaccinate from, and also a large proportion (53) are reckoned amongst the "doubtful," as they were not brought for inspection.

Those vaccinated in the Police Corps have been included, as before, in the Civil Return. In January and February the lymph was very inferior, and new lymph had to be supplied from Bombay; since then it has continued good, the vesicles well formed, running their natural course. It has had to be frequently renewed, on account of the habit of the natives scratching off the vesicles to prevent their being vaccinated from. Lately I have kept a supply in capillary tubes, which in my experience rarely fails. I have a Maratha learning to vaccinate; he has begun to do it himself, and as soon as he commands average success I intend making him the Civil Vaccinator. He appears to be a willing lad, and one who I think is able to combat the prejudices of the natives.

Small-pox was prevalent in the months of November and December, which has made the Mussulman, Parsee, and Christian inhabitants more alive to protective influence; the Hindoos are still much opposed to it.

RUTNAGHERRY.

One Vaccinator under the Civil Surgeon, Assistant Surgeon C. JOHNSON.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	273	....	....	217	79·5
1867	1,302	1,029	....	1,008	77·4

I am glad to be able to report an increase in the number of children vaccinated during the past year, amounting to 1,029, over those of the previous year. This is to be attributed to the great zeal and activity exhibited by the Vaccinator, who has been unremitting in his attention to his duties, and has visited several villages within reach of Rutnagherry, and carried on his labours in those places until all the children have been protected. I have great pleasure in acknowledging the great assistance I have received from the Superintendent of Police, Major Johnstone, in getting the people to come forward to have their children protected, and in assisting to make the people aware of the advantages of having their children vaccinated. There seems to be a tendency towards the better appreciation of the good effects of vaccination among the people generally, and I have no doubt that, now it has been fairly started, it will become more popular every year.

I consider the increase in the number of children vaccinated most satisfactory for the present, but at the same time think that the number ought to increase steadily year by year for some years to come, and have no doubt such will be the case as the people become more enlightened. I have no reason to complain of want of assistance from the authorities now; on the contrary, I have received every help I could expect, and the result is shown by the return.

The Vaccinator has been most painstaking and diligent, and has shown more zeal and atttention to his work than is often witnessed.

VINGORLA.

Senior Apothecary S. HANSON.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	119	....	....	104	87·4
1867	151	32	....	137	90·7

The total number vaccinated during the year 1867 was 151, being an increase of 32 on that of the previous year. Of these, 84 were male and 67 female children; 23 were under one year, and 128 above that age. The successful vaccinations have been 137, or 90·7 per cent. on the total number vaccinated.

The lymph and vesicles were good. No case of small-pox came under observation during the year.

KARWAR.

One Vaccinator under the Civil Surgeon, Assistant Surgeon J. DAVIES.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	....	....	....	....	....
1867	308	308	....	277	89·9

The above result dates from the 1st of April, as previous to that date no Vaccinator was appointed under me; occasional visits were made by a Vaccinator under the Superintendent in 1865 and 1866. Out of the total number vaccinated, 181 were males and 127 females; 24 were under one year and 284 over one year of age. The number under one year is exceedingly low, and is accounted for by the fact that the parents object to the operation within the first year.

I am glad to be able to state that the natives generally have not the aversion to vaccination that they showed a year or two ago, but there still remains a strong prejudice in some classes, especially the Bhundarries. Considering this is the first start, and the population so scattered, as well as the general apathy of the natives, I think the work done is very fair.

The quality of the lymph has been excellent, and the vesicles very characteristic.

SURAT.

One Vaccinator under the Civil Surgeon, Surgeon H. J. GANE (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	1,697	....	....	1,535	78
1867	1,631	....	336	1,395	85·5

During the year ending on the 31st of December 1867, 1,631 children of Surat were vaccinated, being a decrease of 336 compared with the last year: 871 were male and 760 were female children, of which 12 were Christians, 1,279 Hindoos, 244 Mussulmans, 35 Parsees, and 61 other castes. Under one year there were 891, and above one year 740; the total successfully vaccinated being 1,395, unsuccessful 84, and doubtful 152; the percentage of successful being 85·85.

A large portion of the natives have a great objection to have their children vaccinated unless they are induced to do so by Police assistance; some few bring their children for vaccination. I therefore beg to recommend that a permanent Police Peon may be sanctioned.

BROACH.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon T. B. W. P. JOHNSTON (*Acting*).

Years.	Total. Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	974	....	....	894	91·8
1867	1,226	252	....	1,094	89·2

The number of vaccinations performed during the last year amounts to 1,226, showing an increase of 252 over that of the previous year.

Vaccination is constantly carried on in the City and surrounding neighbourhood, and the Vaccinator informs me that the people generally appear anxious to have it performed. As far as I am able to judge, the Vaccinator appears attentive to his duties, and the lymph is of good quality.

POONA.

One Vaccinator under the Civil Surgeon, Surgeon Major R. G. LORD, M.D.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	1,699	....	....	1,378	81·1
1867	2,022	323	....	1,736	85·8

The Returns show an improvement, both in numbers and percentage of success, over the preceding year.

"The City of Poona was, in communication with the Municipal and Police authorities, divided in February 1865 into three vaccinating charges, the smallest of which, in the immediate vicinity of the Civil Hospital, was given to the Civil Station Vaccinator, the other two being provided for by Vaccinators employed and paid by the Municipality.

"The population of the Peits or Wards (six in number) intrusted to the Civil Vaccinator is, according to the Mamlutdar's return, 12,323, in addition to which the Vaccinator also works in the Civil limits, and, when required, attends at the houses of officers and others in Civil departments residing in the Military lines. He does not carry on vaccination in the Sudder Bazar, or among camp followers living within Cantonment limits, that being the duty of the Vaccinator under the Military Staff Surgeon.

"The numbers of vaccinations performed by the Civil Station Vaccinator according to last three annual Reports, completed to 31st December each year, were—

1864.... 1,878
1865.... 1,537
1866.... 1,699

Total.. 5,114."

The above extract from a special Report made in September last gives the extent of district, and numbers of vaccinations for the three preceding years, showing a falling off in 1865 and 1866, which, however, appears now to have been recovered. The Vaccinator, along with other servants of the old Civil Hospital Establishment, has been transferred to the Sassoon Hospital, which is situated within the limits of his former charge, and the returns of his work will henceforth be designated as those of the "Sassoon Hospital Vaccinator," and will comprise, as hitherto, vaccinations performed outside, as well as those done in the Hospital on the regular bi-weekly vaccinating days.

AHMEDNUGGUR.

Two Vaccinators under the Civil Surgeon, Assistant Surgeon H. T. DANN, B.A., (*Acting*), one under Government, and one under the Municipality.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1866	1,080	....	.....	940	87·0
	1867	993	....	87	908	91·4
Municipal	1866	566	....	....	491	86·8
	1867	735	169	....	669	91·0

It affords me much pleasure to indicate, what may be observed from the returns, a considerable increase (166) in the number of vaccinations during the year 1866 over those of 1865, and an increase of 182 in the number of operations in the year 1867 as compared with the preceding year. It is also noteworthy that the percentage of successful cases of vaccination has gone on steadily increasing, being 79·9 in 1865, 86·9 in 1866, and 91·2 in 1867. There is a considerable increase in the number of vaccinations effected by the Municipality Vaccinator this year as compared with last year's return, 566 vaccinations having been effected by him in 1866 as compared with 735 during the year 1867, thus showing an increase of 169 in the latter year. It is obvious that he is becoming better known and liked by the inhabitants. There has been a decrease of 87 in the number of vaccinations effected by the Civil Surgeon's Vaccinator during 1867 as compared with 1866; the employment of two labourers in a field where there was formerly only one may help to explain the decrease. At the Civil Hospitals the number of cases, 126, showed an increase of 5 as contrasted with the preceding year, while the number of cases vaccinated among the Police and in the Jail show an increase respectively of 63 and 33, the gross total for the year 1866 being 1,817, while that for 1867 was 1,950, thus indicating an increase for 1867 of 133 cases. In the month of January seven cases of small-pox occurred in the Police Lines, four of whom had been previously vaccinated; all the cases were mild ones, and all recovered. During the month of January small-pox was epidemic; cases occurred at Bhingar and at Nuggur. Vaccination was actively carried on at both places, as also among the Police, when the disease broke out. Towards the end of the month of November three cases having occurred in the Lines of the 3rd Dragoon Guards' camp followers, and one case in the Lines of the 16th, I instituted a house-to-house visitation by Vaccinators, and had every unprotected person within Cantonments vaccinated. Those vaccinations are included in the above, and were effected by the Civil Surgeon's and the Municipality's Vaccinators. I have much pleasure in testifying to their ability, industry, and energy.

SATTARA.

One Vaccinator under the Civil Surgeon, Assistant Surgeon H. V. CARTER, M.D.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	1,611	....	....	1,536	95·3
1867	1,344	....	267	1,270	94·5

During the year under review a decrease in the number of operations as compared with the previous year, 1866, is observed, but many more children were vaccinated than in 1865. In the Report for this last-named year reasons were given which appeared to explain the sudden diminution of operations then noticeable; these being, first, the establishment of District Vaccinators (Municipal); and next, the non-prevalence of small-pox. It is satisfactory to state that, notwithstanding the continued operation of these two influences, the numbers vaccinated in Sattara are still considerable,* thus evincing efficiency of this establishment, and probably a more enlightened disposition amongst the people. There has again been a singular absence in 1867 of the scourge small-pox amongst the inhabitants of this neighbourhood (as well as of cholera); hence a powerful stimulus to the extension of vaccination has been in a measure wanting. Yet the people are probably beginning to think and act for the future, seeing that by far the majority of vaccinations at the Civil Hospital are practised on children brought from a distance of many miles, sometimes twenty-five or thirty, and that not under the impulse of fear.

* In 1865..... 914.
„ 1866..... 1,611.
„ 1867..... 1,344.

The falling off in numbers during 1867 is almost entirely confined to the months of March, April, and May.

The quality of the lymph has been good; only once (in February) did there seem cause to seek for fresh lymph; but that obtained from the Superintendent of these parts did not "take." Since then there has been no ground for complaint.

The proportion of successful to unsuccessful cases is large. In other respects, the returns under report do not call for further notice; but it may be added, in conclusion, that it is very desirable any new arrangements for replacing the Police Peon now taken away from the service of the Vaccinator be speedily carried out, as one man cannot search for, or convey to hospital, the children he has to vaccinate,

and yet without something like entreaty many parents will not bring their children; and they have often to be directly induced to carry out their promise to do so. In fact, the Peon is indispensable, and if not soon replaced here the number of vaccinations must necessarily diminish.

SHOLAPOOR.

One Vaccinator under the Civil Surgeon, Assistant Surgeon C. F. Ogilvie, M.D.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	2,241	....	....	1,753	78·2
1867.....	1,655	....	586	1,229	74·3

During the year under report the number of persons vaccinated was 1,655, of whom 887 were males, and 768 were females; 666 were children under one year of age, and 989 were above that age; 1,229 were successful, 185 doubtful, and 241 were unsuccessful.

There is a considerable falling off in the number of operations, as compared with the previous year, when 2,241 children were vaccinated. This is owing to the Vaccinator having been sentenced in the month of August to six months' rigorous imprisonment in the Criminal Jail at Sholapoor for rioting; since that date the duties have been carried on by the Vaccinator attached to the Sholapoor Charitable Dispensary. During a residence of nearly six years at this station I have taken very great interest in this work, and it is therefore with much regret that I find the percentage of successful operations during the year under report amounts only to 74·3, and, including the cases returned as doubtful, to 85·4. This low percentage of success may be attributed to the want of care by the Vaccinator in selecting subjects for the operation; but, whatever is the reason, I am sure it is not attributable to the quality of the lymph, for in every instance, without any exception, where I have performed the operation, whether upon European or Native, it has been successful.

There is, however, very little doubt that the natives here do not, as a rule, appreciate the blessing of this almost certain preventive against small-pox, otherwise the number of operations upon children under one year of age would be much greater than it now is; and I feel convinced that until vaccination be made compulsory by law, as it is in England, upon children before a certain age, much more favourable results will not be attained.

DHOOLIA.

One Vaccinator under the Civil Surgeon, Assistant Surgeon G. BAINBRIDGE (*Acting*).

Year.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	792	....	....	694	87·6
1867	808	16	....	710	87·9

My predecessor, Dr. Cates, has drawn up a Report upon the results of vaccination at this station during the first eleven months of the year.

The total number vaccinated during the year is 808, of which 710 were successful and 59 unsuccessful, 39 doubtful and re-vaccinated; 630 of the total number of persons vaccinated were under one year old, and 178 above one year.

The increase of cases vaccinated as compared with the previous year's results is 16, and the percentage of successful cases 87·9; of the persons vaccinated, 445 were males and 363 females.

There is a great want of readiness among the inhabitants to submit their children to vaccination, and this unwillingness appears to exist chiefly among the higher castes. These people do not absolutely refuse to have their infants vaccinated, nor do they offer any argument against the operation, but they constantly procrastinate, and tell the Vaccinator that the next day and the next their children shall be produced, and sometimes go so far as to say that they have no children requiring vaccination, when such is not the case; others refuse to allow lymph to be taken from their children's arms.

I have written officially to Mr. Sheppard, the Collector and Magistrate of Khandeish, requesting him to cause a register of births and deaths in this town to be instituted, and to furnish me with a copy of the same each month. I believe such a register would assist in bringing under our notice the infants requiring vaccination.

The assistance at the disposal of the Assistant Vaccinator to help him in collecting the cases under treatment is totally inadequate, and I have no doubt that were we to have permanent servants to assist us, a large number of people would be brought forward for vaccination.

Shaik Emam, the Vaccinator, has been most assiduous in the performance of his duties, and has given complete satisfaction.

Vaccination Report for 11 *months, from* 1*st January to* 30*th November* 1867.

"Being about to leave the station, and the year having nearly expired, it becomes my duty to draw up a brief Report of Vaccination, during the period already elapsed,

for the information of my successor and for embodiment in his annual Report. During the eleven months under review the total number of persons vaccinated has been 739. Of these, 402 were males and 337 females ; 587 were under one year old, and 152 above that age ; 647 are returned as successful, 55 unsuccessful, and 37 as doubtful, showing a percentage of successful cases of 8·75, which is almost identical with that for the whole year of 1866.

"As regards these results, though there is no falling off as compared with the previous year, yet I cannot look upon them as quite satisfactory in a large town like Dhoolia. The same difficulty has been experienced in collecting children, and afterwards getting them brought for inspection, as was alluded to in my last Report ; and the difficulty is now likely to be enhanced, in consequence of the Vaccinator, in accordance with a late Resolution of Government, having lately lost the services of the Peon who formerly assisted him. I have written, through Dr. Wright, to the Inspector General on this subject, so I need not enter into it again here. A great desideratum, in my opinion, is some efficient system of registration of births in the town, a copy of which register, if kept, might be sent monthly to the Civil Surgeon for his information for vaccination purposes, and it was my intention to have addressed the Collector officially on this subject.

"The lymph has been of good quality, producing characteristic vesicles, and has been several times supplied to neighbouring stations.

"The Vaccinator, Shaik Emam, has given me entire satisfaction in the performance of his duties."

NASSICK.

One Vaccinator under Sub-Assistant Surgeon A. SUMMERS.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	763	....	....	621	81·4
1867	1,079	316	....	1,029	95·3

I have the gratification of reporting very favourably upon vaccination carried on during the year just expired. The return exhibits a very large increase in the number operated upon, namely, 1,079, an increase of 316 compared with the previous year. Of the numbers operated upon, 584 were males and 495 females, and the result was

1,029 successful cases, 32 unsuccessful, and 18 doubtful. This result was brought about from a Peon being detached throughout the year to assist in this operation, enabling the Assistant Vaccinator to operate more frequently and more extensively in the town, and seeing almost every case operated upon, even those from neighbouring villages, who generally attended at the Civil Hospital.

I reported last year that small-pox and measles prevailed for three months in 1866 amongst the African children at the Sharanpoor Institution. I am happy to report that during the past year both it and the town of Nassick enjoyed an immunity from epidemic in any form.

I feel it my duty to bear testimony in a highly favourable manner to the zealous attention to his duties evinced by the Assistant Vaccinator during the past year; his operations, carried on more extensively, showed a praiseworthy result.

BELGAUM.

One Vaccinator under the Civil Surgeon, Surgeon R. C. Thorp, M.D. (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	612	....	....	595	97·2
1867.....	803	191	....	759	94·5

There are two Vaccinators in this town, both able men; the one paid by the Municipality,* and the other by Government. By the above Report the Government Vaccinator has operated on 803 individuals during the past year, and the Municipal Vaccinator, by the Dispensary Report, on 746. Thus in this town, and the surrounding villages of the township and Shapoor, 1,549 persons have availed themselves of the prophylactic in the past year. By the annual return for 1866 of my predecessor the total number vaccinated was 1,335; the increase of 214 is satisfactory, and proves that the prophylactic is appreciated.

The Government Vaccinator has, besides the above, vaccinated in the Sudder and Cantonment Bazaar 130, and in the Lines of the Garrison and detail 55, making a total of 1,734 vaccinated by these operators during the year 1867.

---

* This Vaccinator's work is shown by the Superintendent of Vaccination, Southern Circle, along with that of other Municipal Vaccinators under him.

DHARWAR.

One Vaccinator under the Civil Surgeon, Surgeon M. M. MACKENZIE.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	597	....	....	491	82·3
1867	635	38	....	548	86·3

The accompanying Return of vaccination for the year 1867 shows the number to have been 635, or an increase of 38 over that of the preceding year; the percentage of success being 86·3, while the preceding year it stood at 82·3: of the whole 635 548 proved successful. The greatest number vaccinated in any one month was 74, in February; then followed March, April, and May, giving respectively 63, 61, and 56.

As to caste, 462 were Hindoos, 160 Mussulmans, 11 Christians, 1 Parsee, and 1 of other caste.

Sex.—360 were males, 275 females.

Age.—Under one year 255 were vaccinated, and above that period 380.

The vaccine matter has been abundant and good, and assistance has been extended by giving it to the District Vaccinator, as well as to the Medical Officer of Her Majesty's 12th Regiment N.I. In April last I put a stop to the Vaccinator acting for the 12th Regiment, as I believed the orders of Government are, that regiments keep up their own vaccination. During October I prevailed upon the Municipality to grant the Vaccinator the assistance of a Peon while going his rounds, and I trust that this will greatly conduce to an extension of vaccination.

The Vaccinator meets with no obstruction in the execution of his duties, and I have again the pleasure to bear witness to his steady and zealous behaviour; he seems to possess the confidence of the natives.

KOLAPOOR.

One Vaccinator under Apothecary C. ANDING.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866	1,674	....	....	1,662	99·3
1867	1,751	77	....	1,740	99·3

During the past year the number of vaccinations performed by the Station Vaccinator in the City of Kolapoor, with the whole of the villages of the Petta Kurveer, amounts to 1,751, which is more than that of the year preceding by 77, and less than the average of the 5 preceding years by 476. Of the total number vaccinated in the year under report 880 were males and 871 females; 401 were children under one year, and the remaining 1,350 were above that age. The percentage of the successful cases has been 99·3.

The monthly average number of vaccinations performed has been 145·9. The average for the previous five years gives a decrease of 476 cases, whereas that exhibited in the previous year under this head amounted to 793, thus showing that there has been a considerable improvement in the state of vaccination for the year under report.

During the year a few isolated cases of small-pox occurred in four villages of the Kurveer Petta, namely, Kulumba, Negwa, Nundgaum, and Kunary, but the disease was never reported to have shown itself in an epidemic form.

The lymph in use has been of good quality, and has not failed. Lymph was supplied, as usual, to the Camp, and to some of the Vaccinators serving under the Superintendent of Vaccination, Southern Circle, when required. The Station Vaccinator was diligent and attentive to his duties, and his conduct, on the whole, has been satisfactory.

The annual Vaccination Return of the Dispensary is also annexed, from which it will be seen that 246 cases vaccinated during the year have proved successful; this number is greater than that exhibited in the previous year's return by 21 cases. The vesicles have always presented the normal character of the vaccine pock.

AHMEDABAD.

Two Vaccinators under the Civil Surgeon, Surgeon Major J. PIRIE, M.D. (*Acting*).
Two Vaccinators under the Municipality.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	5,619	....	....	5,505	96·8
1867.....	4,273	....	1,416	4,153	97·2

Compared with the previous year, there has been a considerable decrease in the total number of vaccinations for the year that has just closed, in which 4,273 were performed, and in the preceding year 5,689, showing a diminution of 1,416. But

though there has been this unexpected falling off, the results have been more favourable, as the percentage of success was 97·2, and for the previous year 96·8. The failures were 81, and 39 doubtful. So that in respect of protective influence the work done has been a fair average.

The total operations of each of the two Vaccinators for the year respectively were 1,883 and 2,390, exhibiting a difference of 507, which is to be attributed to the circumstance that in the district of one Vaccinator small-pox was prevalent, and therefore the inhabitants of that part of the city were awakened to the prophylactic benefits of vaccination. As regards sex, 2,235 were in males and 2,038 in females, and, as Dr. Wyllie observed, this preponderance in females is a hopeful sign of the increasing care for the protection of female offspring. In respect of age, 2,804 were under one year and 1,469 over one year. In each caste there has not been much difference in the total vaccinated, but there has been an increase in the Parsee section. The greatest number of vaccinations were effected in the months of April, May, June, and July, when numerous cases of small-pox occurred, which doubtless caused the people to seek for the protective power of vaccination; as, on the other hand, when fever, bowel complaints, and chest affections prevail, parents are averse to submit their children for operation, though the Vaccinators visit the dwellings to meet their convenience. The least number vaccinated in one month was 302, in September, and the highest 423, in June.

The lymph has continued good and efficient, the vesicles well formed, clean, and distinctive, and supplies have been kept up and furnished to the Cantonment and outstations.

Small-pox and measles were frequent in March, April, and May, and a few isolated cases in January, July, and September; 50 deaths were reported. As the population of this large city is fluctuating, and sometimes there is a large immigration from the neighbouring States, small-pox is no doubt imported, and but for the agency of the Municipal vaccine establishment the disease would widely spread and the mortality be great. Inoculation has been discontinued altogether in Ahmedabad; and, except that the people are backward in bringing forward their children, no obstruction to the propagation of vaccination appears to exist. After being operated on, parents frequently conceal their children, as they imagine that taking lymph from the vesicles impairs the successful result. Though the work done by the Vaccinators has fallen considerably below that of the previous year, Dr. Wyllie bears testimony to their industry and zeal. I regret I am unable to give a fuller report from personal observation of the vaccination for the past year, as I only received charge of the Civil medical duties in the early part of December last.

KAIRA.

One Vaccinator under the Civil Surgeon,

Assistant Surgeon H. Cook, M.D. (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	668	....	....	590	88·3
1867.....	867	199	....	764	81·1

The total number of cases of vaccination for the past year has been 867, showing, I am happy to say, an increase of 199 over the total number of operations during the preceding year; of this total all but 76 have been among children under one year old; 521 were males, 346 females. The great majority of cases were necessarily among the Hindoo population, among whom 782 operations were performed, 57 cases were among the Mussulmans, 27 among unspecified castes, and one among the Christian community. No Parsee individual was submitted to the operation; but this section of the community is exceedingly limited in Kaira, and they are, as a rule, exceedingly averse to the operation.

With regard to the result, that has, I consider, been very fair, the return showing only 26 unsuccessful cases, while 77 are set down as doubtful. A great deal of want of success is attributable to the carelessness of the parents, who do not take sufficient care of the vesicle while it is being developed, as they take little trouble to guard it from irritation, or prevent the child from destroying it altogether.

The work of the Vaccinator is, of course principally performed in the town of Kaira, but it is not absolutely limited to it, as he goes to villages in the immediate neighbourhood when subjects in the town itself are scarce; and in this way he is frequently able to maintain the supply of lymph, when he would otherwise be almost sure to lose it if confined to the town alone. Some improvements have been introduced in his system of work. One hindrance which formerly existed has now been removed: formerly when he went to the town on his business he was given a Peon at random by the Municipality to assist in collecting the children, and this was found to cause serious delay and difficulty; but now, by an arrangement made with the Collector, it is ordered that the same Peon should attend him always; consequently he knows where to find the recently vaccinated and the unvaccinated children without delay.

The character of the lymph and vesicles has been very good throughout the year, and the vaccination has been satisfactorily performed. The supply of lymph has been continuous and abundant. The children vaccinated have been inspected at intervals of about a month's duration throughout the year, and the result was in all cases satisfactory.

The inhabitants of the town and neighbourhood are now well acquainted with the benefits of vaccination, and willingly submit themselves or their children to it, and, with the exception perhaps of the Parsees, I do not think that there is any considerable number who entertain any serious objections to the operation on the ground of caste or similar prejudices.

As to the beneficial results of the operation, I may say that there has been no epidemic small-pox here for a long time; and although I have no doubt isolated cases do occur here and there, they cannot be very numerous, as I have never had to prescribe for one, nor have I seen one during my residence here; and, as well as my memory serves me, I do not think I have seen during the past year a single case where any one has borne the recent marks of the disease. I do not think that inoculation is now ever practised here, as I have never heard of a case, though I have frequently made inquiries on the subject.

RAJCOTE.

One Vaccinator under the Civil Surgeon,
Assistant Surgeon A. M. BLOMFIELD (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	1,646	....	....	1,507	91·6
1867.....	999	....	647	940	94·1

Of the number entered in this return the greater part have been vaccinated in the town of Rajcote and in villages. These will in future be kept separate, under the head of Chief's Vaccinators.

The percentage of successful cases is much higher than anything I have inspected, and I question if more than two out of three are really successful in the first vaccination.

KURRACHEE.

One Vaccinator under the Civil Surgeon, Assistant Surgeon N. HOPKINS (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	3,167	....	....	2,988	94·3
1867.....	3,411	244	....	3,265	95·6

From the above table it it will be seen that there is an increase of 244 people vaccinated during the last year over 1866, and of 297 over 1865, and of 1,447 over 1864, which is a fair criterion that vaccination is increasing, and that the prejudice against it is in a great measure overcome in Sind; and I think that most of those parents who leave their children to grow up unprotected do so from indifference, and from no particular prejudice against it. Of the number vaccinated most were quite children—those belonging to Kurrachee were generally under one year; but it is satisfactory to see men of all ages from the Mekran Coast (Puttans and others who come with kafilas from Cabool and elsewhere) come voluntarily to the Hospital to be vaccinated—not a very large number, it is true, but many come. Lymph and vesicles have been good throughout the year.

There were a few cases of small-pox during the past year amongst some of the poor people, introduced, I heard, by some Mekranees, but no death, that I am aware of, occurred.

No case of inoculation has been brought to my notice, and I do not think it is practised in Kurrachee.

There is no doubt in my mind that much benefit would result if another Vaccinator were appointed to Kurrachee, and there is plenty of work for two in the City and suburbs, the whole of Camp, and the whole distance from Ghizree Bunder to Kurrachee, a distance of twelve miles, with a population of about a million.

HYDRABAD.

One Vaccinator under the Civil Surgeon, Assistant Surgeon J. F. FFOLLIOTT (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	2,022	....	....	1,881	93·0
1867.....	1,702	....	320	1,615	94·9

The results of the past year show a decrease of 320 compared with the previous year. This is owing to the work of the Assistant Vaccinator being now confined to the town of Hydrabad, Giddoo-ka-Tanda and Fullellee being provided for by the Superintendent of Vaccination. Vaccination is performed in my presence at the Charitable Dispensary twice a week, but some people refuse to send their children there, and the Vaccinator is in such cases allowed to vaccinate at their own houses. Three cases of variola were admitted to the Civil Hospital during the year; but the disease has not been prevalent, and these patients were adults over twenty-five years of age.

SHIKARPOOR.

One Vaccinator under the Civil Surgeon, Assistant Surgeon S. DUCKERING (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	1,435	....	....	1,377	95·9
1867.....	1,490	55	....	1,434	96·2

A few cases of small-pox were admitted into the Civil Hospital and the Dispensary: the disease was of a mild character.

A few cases also occurred in the town.

The lymph continues very good.

KOTREE.

One Vaccinator (Municipality's) under the Civil Surgeon, Assistant Surgeon J. WILLIAMS, M.D. (*Acting*).

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	654	....	....	548	83·8
1867.....	893	239	....	810	90·7

Of the above 893 cases 420 were vaccinated in the town of Kotree, and 473 in the Kotree District, where vaccination is also carried on under the Superintendent of Vaccination for Sind. There are 36 doubtful cases; *i. e.*, cases that were not in-

spected after the operation. If the doubtful cases be divided in proportion to the successful and unsuccessful ones, the percentage of successful cases will be raised to 94·5, which perhaps would be nearer the truth than 90·7. The lymph had to be changed once or twice during the year. The Vaccinator seems very zealous in his work, but complains of the reluctance of the people to allow their children to be vaccinated, and that he is not at times assisted by Peons or Police Officers. I have represented this to the authorities, who promise that every assistance shall be given.

There are rumours occasionally of small-pox, but we have great difficulty in ascertaining the truth, for whenever inquiry is made concerning the existence of small-pox the inhabitants invariably deny it, apparently from fear of vaccination being enforced upon them. Once in the hot season there occurred a few cases of small-pox in Kotree, but I have not seen any since, excepting in a Sowar of the 3rd Sind Horse, who was admitted into hospital with small-pox when the regiment was marching through Kotree.

KUTCH.

DORABJEE HORMUSJEE, G.G.M.C.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	1,139	....	....	944	82·9
1867.....	705	....	434	592	83·1

During the last year 705 vaccinations were performed at the Dispensary and in the district of Kutch. It shows a falling off of 434 operations when compared with those of the year 1866, but still an excess by 99 over those of 1865. Of the 705 subjects, 344 were males and 361 females; of which 254 were under one year of age, and the rest (451) above it; 590 were successful, 87 unsuccessful, and 28 doubtful. Vaccination during the last year was not conducted at all satisfactorily, in consequence of great opposition experienced both from the people of Bhooj as well as those from the districts.

For the last two months vaccination could not be carried on at the Dispensary, as the lymph was not kept up, in consequence of the few cases that were available at a time, and even those not being able to preserve the vesicles intact. In the case of those that were vaccinated it was only with much trouble and difficulty. In the districts belonging to His Highness the Rao, the Vaccinators every now and then met with great opposition, but this was removed by orders from His Highness bringing them to their right senses; but in the districts belonging to the Bhyats vaccinating was

altogether out of question, as the greatest opposition was met therein. With the exception of one caste, the Borahs, the people generally are averse to vaccination, but are greatly in favour of inoculation; for I observed, during the epidemic of small-pox that broke out last year, that numbers of them flocked to the inoculators, even at the sacrifice of some money, but none of them, except the Borahs, of their own accord resorted either to the Dispensary or to the Vaccinators. I have received similar reports from the Vaccinators in the districts.

The people are impressed with the idea that of those inoculated not one ever dies from small-pox; hence they are found ready to have their children inoculated. but show great opposition to vaccination. They cannot be made to understand that by inoculation they are carrying the contagion to their very doors, and placing those who are unprotected in even greater danger. I have no doubt that the epidemic raged very violently because inoculation was practised to a great extent. Unless, therefore, inoculation be made criminal or punishable by law, and vaccination be made compulsory to some extent, it is not unlikely that another epidemic may break out with equal violence.

ADEN.

One Vaccinator under the Civil Surgeon, Surgeon R. W. James, M.D.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1866.....	799	....	....	610	76·3
1867.....	628	....	171	416	66·2

The returns for the last year show a decrease of 171 in the number vaccinated as compared with 1866, and for this three causes are to be assigned; viz., a smaller number of liberated slaves brought to Aden by Her Majesty's Ship "Highflyer"; the absence of any epidemic of small-pox, the sole incentive that prompts the apathetic inhabitants to submit to vaccination; the failure in the supply of lymph during a part of the year.

Her Majesty's Ship "Highflyer", during the end of the year, was the only vessel that came to Aden for adjudication of captured slaves. She had only a small number of slaves, and I am glad to say that they were free from variola.

42 cases of epidemic small-pox were admitted between January and August, the greatest number (10) occurring in March. The type, though confluent, was not so

virulent as last year, the mortality being only 26·6 per cent. of the number treated in the Small-pox Hospital.

The supply of lymph was well kept up till the end of May, when it failed. On the 22nd of May 5 children were vaccinated, but of these three were taken away to the interior, after the parents had satisfied themselves, on the fifth day at the Hospital, that the vaccination had succeeded; from the fourth the parents refused to allow the lymph to be taken; and the fifth was unsuccessful. On the 29th, 6 more children were vaccinated from lymph that had been kept between glasses and points, but they did not succeed. In July, however, fresh lymph from England in tubes was employed successfully, and at the date of this Report it continued in use. The character of the lymph was good. Vaccination from child to child is the only certain way to ensure success in a climate like Aden.

The conduct of the Vaccinator has been good.

Statistics of Small-pox during the year 1867.

		Number.
Total number of cases of small-pox during the year		45
Of the total number were vaccinated	In infancy	..
	In after-life	..
Of this died of small-pox when vaccinated	In infancy	..
	In after-life	..
Of the total number were unprotected		45
Of this died of small-pox		12
Total deaths from small-pox out of the total number of cases		12

APPENDIX.

TABLE

VACCINATION UNDER SUPERIN

Table showing the Number and Names of the Circles, and their Superintendents; the with those of last Year ; the Total Number arranged according to Sex, Caste, Number of Operations performed by

Number.	Circles.	Names of the Medical Officers Superintendents of Vaccination.	Number of Native Vaccinators attached.	Total Number Vaccinated.	Compared with last year.		
					1866.	Increase.	Decrease.
1	Central	Assistant Surgeon P. S. Turnbull, M.D	36	71,037	61,543	9,494	..
		Assistant Surgeon E.H.R. Langley, A.B.(Actg.)	*9	4,120	213	3,907	..
2	Southern	Surgeon H. Day, M.D	29	39,525	40,948	..	1,423
			*9	6,941	7,229	..	288
3	Northern	Dr. Muncherjee Byramjee Colah (Acting)	33	68,282	69,085	..	803
			*2	1,253	57	1,196	..
4	Sind	Surgeon J. Pinkerton, M.D	17	33,821	44,126	..	10,305
			†16	21,854	23,594	..	1,740
5	Kattiawar	Surgeon E. R. Butler, M.D.....	8	7,829	6,563	1,266	..
		Assistant Surgeon A. M. Blomfield (Acting)..					
6	Rewa Kanta	Assistant Surgeon J. T. Welsh, M.D.	5	7,967	5,833	2,134	..
7	Presidency	Sub-Assistant Surgeon Anunta Chundroba	6	10,985	8,866	2,119	..
		Total....	167	273,614	268,057	5,557	..

* Municipal Vaccination.

No. I.

TENDENTS IN BRITISH TERRITORY.

Number of Vaccinators employed; the Total Vaccinations performed and compared Age, and Result; the Ratio of Successful to Total Vaccinated; and the Average each Vaccinator; for the year 1867.

Total Number Vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Average Number of Persons vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
36,366	34,671	64,033	2,966	21	11	4,006	20,496	50,541	68,130	1,488	1,419	95·9	1,973
2,359	1,761	3,608	430	6	1	75	1,923	2,197	3,508	331	281	85·1	458
21,640	18,485	34,491	2,198	227	..	2,699	6,310	33,215	37,754	809	962	95·5	1,363
3,753	3,188	6,156	652	16	2	115	2,267	4,674	6,477	291	173	93·3	771
36,539	31,743	58,301	5,499	6	232	4,334	45,527	22,755	63,293	1,820	3,169	92·7	2,069
656	597	917	307	..	..	29	799	454	1,176	48	29	93·9	626
18,661	15,160	4,522	26,456	1	..	2,842	11,572	22,249	32,353	358	1,110	95·6	1,989
12,020	9,834	2,422	18,100	1	..	1,331	6,642	15,212	21,022	297	535	96·2	1,681
4,202	3,627	6,954	681	..	..	194	3,107	4,722	7,550	186	93	96·4	978
4,031	3,936	7,487	380	..	3	97	4,231	3,736	7,373	374	220	92·5	1,593
6,279	4,706	7,402	1,617	966	766	234	5,072	5,913	8,428	1,179	1,378	76·7	1,831
145,906	127,708	196,203	59,196	1,244	1,015	15,956	107,946	165,668	257,064	7,181	9,369	94·0	1,638

† Local Vaccination.

TABLE

VACCINATION UNDER SUPERINTENDENTS

Table of Vaccination through the Agency of Native Chiefs, arranged according to for the

Number.	Circles and Stations.	Medical Officers.	Number of Native Vaccinators attached.	Total number Vaccinated.	Compared with last year.		
					1866.	Increase.	Decrease.
1	CENTRAL	Assistant Surgeon P. S. Turnbull, M.D. " E. H. R. Langley, A.B. (Acting)	2	1,668	953	715	..
2	SOUTHERN	Surgeon H. Day, M.D.	25	19,972	18,019	1,953	..
3	NORTHERN	Dr. Muncherjee Byramjee Colah (Acting)	12	20,553	22,043	..	1,490
4	SIND	Surgeon J. Pinkerton, M.D	1	2,529	975	1,554	..
5	KATTIAWAR	Surgeon E. R. Butler, M.D. Assistant Surgeon Blomfield (Acting)	30	32,046	26,759	5,287	..
6	REWA KANTA	" J. T. Welsh, M.D.	6	5,359	4,855	504	..
7	BHOOJ	Mr. Dorabjee Hormusjee, G.G.M.C.	3	705	1,139	..	434
		Total	79	82,832	74,743	8,089	..

No. II.

AND OTHERS IN NATIVE TERRITORY.

the Circles of Vaccination and Stations, and showing Details as in Table No. I., year 1867.

Total number Vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of Successful to Number vaccinated.	Average number of Persons vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year	Above one year.	Successful.	Unsuccessful.	Doubtful.		
977	691	1,617	42	..	..	9	831	837	1,417	123	128	84·9	834
10,641	9,331	18,436	1,020	151	..	365	5,407	14,565	19,033	553	386	95·3	799
10,857	9,696	17,379	1,475	..	..	1,699	11,424	9,129	18,376	1,221	956	89·4	1,713
1,409	1,120	560	1,924	1	..	44	813	1,716	2,297	191	41	90·8	2,529
17,470	14,576	27,160	4,646	..	..	240	11,513	20,533	29,807	1,494	745	93·0	1,068
2,696	2,663	5,016	264	..	5	74	2,318	3,041	5,054	216	89	94·3	893
344	361	361	344	..	..	..	254	451	590	87	28	83·7	235
44,394	38,438	70,529	9,715	152	5	2,431	32,560	50,272	76,574	3,885	2,373	92·4	1,049

TABLE

VACCINATIONS UNDER

Table of Vaccination under Civil Surgeons and others, arranged according to

Number.	Division of Deputy Inspectors General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached.	Total number Vaccinated.	Compared with last year.			Sex.	
					1866.	Increase.	Decrease.	Males.	Females.
1	Presidency	Tanna	* 1	176	202	..	26	91	85
		Rutnagherry	1	1,302	273	1,029	..	795	507
		Carwar	1	308	....	308	..	181	127
		Vingorla	..	151	119	32	..	84	67
		Surat	1	1,631	1,967	..	336	871	760
		Broach	1	1,226	974	252	..	747	479
		Alibaugh	..	200	226	..	26	125	75
		Bandora	..	93	98	..	5	58	35
		Coorla	..	77	69	8	..	42	35
		Oorun	..	102	58	44	..	70	32
		Callian	..	104	63	41	..	60	44
		Bhewndy	..	78	....	78	..	47	31
		Dapoolie	..	123	....	123	..	71	52
		Sawunt Warree	..	58	....	58	..	52	6
		Honore	..	59	192	..	133	39	20
		Total	5	5,688	4,241	1,447	..	3,333	2,355
2	Poona	Poona	1	2,022	1,699 *1,389	323 ..	.. 1,389	1,289	733
		Ahmednuggur	1	993	1,080	..	87	640	353
			* 1	735	566	169	..	452	283
		Sattara	1	1,344	1,611	..	267	767	577
		Sholapoor	1	1,655	2,241	..	586	887	768
		Dhoolia	1	808	792	16	..	445	363
		Nassick	1	1,079	763	316	..	584	495
		Belgaum	1	803	612	191	..	459	344
		Dharwar	1	635	597	38	..	360	275
		Kolapoor	1	1,751	1,674	77	..	880	871
		Total	10	11,825	13,024	..	1,199	6,763	5,062
3	Northern	Ahmedabad	* 2	4,273	5,689	..	1,416	2,235	2,038
		Kaira	1	867	668	199	..	521	346
		Rajcote	1	999	1,646	..	647	584	415
		Dholka	..	....	513	..	513	....	....
		Veerungaum	..	....	495	..	495	....	....
		Ahmedabad (Dispensary)	..	8	....	8	..	5	3
		Total	4	6,147	9,011	..	2,864	3,345	2,802

* Municipal

No. III.

Civil Suegeons and others.

Division, and showing the Details as in Table No. I, for the year 1867.

Total number Vaccinated, arranged according to										Ratio per cent. of Successful to number Vaccinated.	Number of Persons vaccinated by each Vaccinator.
Caste.					Age.		Result.				
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Caste.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
124	7	37	7	1	54	122	103	20	53	58·5	176
1,296	6	..	....	....	564	738	1,008	117	177	77·4	1,302
160	59	95	2	1	24	284	277	27	4	89·9	308
136	8	7	....	....	23	128	137	9	5	90·7	....
1,279	244	12	35	61	891	740	1,395	84	152	85·5	1,631
803	361	1	61	....	569	657	1,094	19	113	89·2	1,226
113	64	3	....	20	75	125	180	13	7	90·0	....
56	15	22	....	....	10	83	64	16	13	68·8	....
19	17	33	8	....	45	32	35	24	18	45·5	....
68	25	2	6	1	28	74	76	7	19	74·5	....
39	40	7	8	10	51	53	88	5	11	84·6	....
28	38	..	6	6	46	32	38	23	17	48·7	....
86	35	2	....	....	35	88	123	....	....	100·0	....
24	30	4	....	....	6	52	46	11	1	79·3	....
43	2	14	....	....	12	47	51	6	2	86·4	....
4,274	942	239	133	100	2,433	3,255	4,715	381	592	82·9	929
1,556	330	58	78	....	1,368	654	1,736	119	167	85·8	2,022
715	185	30	3	60	654	339	908	51	34	91·4	993
609	91	7	....	28	364	371	669	39	27	91·0	735
1,244	62	12	....	26	553	791	1,270	15	59	94·5	1,344
839	544	6	....	266	666	989	1,229	241	185	74·3	1,655
603	86	2	....	117	630	178	710	59	39	87·9	808
858	51	25	....	145	619	460	1,029	32	18	95·3	1,079
633	164	6	....	....	338	465	759	24	20	94·5	803
462	160	11	1	1	255	380	548	74	13	86·3	635
1,707	44	..	....	....	401	1,350	1,740	6	5	99·3	1,751
9,226	1,717	157	82	643	5,848	5,977	10,598	660	567	89·6	1,183
3,412	819	15	24	3	2,804	1,469	4,153	81	39	97·2	2,136
782	57	1	....	27	791	76	764	26	77	88·1	867
784	197	..	5	13	435	564	940	39	20	94·1	999
....	....	..	....	....	....	....	....	....	....	....	....
....	....	..	....	....	....	....	....	....	....	....	....
5	....	2	....	1	2	6	8	....	....	100·0	....
4,983	1,073	18	29	44	4,032	2,115	5,865	146	136	95·4	1,000

TABLE

Number.	Division of Deputy Inspectors General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached.	Total number Vaccinated.	Compared with last year.			Sex.	
					1866.	Increase.	Decrease.	Males.	Females.
4	Sind	Kurrachee	1	3,411	3,167	244	..	2,024	1,387
		Hydrabad	1	1,702	2,022	..	320	917	785
		Shikarpoor	1	1,490	1,435	55	..	805	685
		Kootree	* 1	893	654	239	..	516	377
		Kurrachee (Dispensary)	..	116				67	49
		Sukkur ,,	..	677				450	227
		Jacobabad ,,	..	11				7	4
		Larkhana ,,	..	415				229	186
		Mehur ,,	..	192				100	92
		Sehwan ,,	..	163				99	64
		Jerruck ,,	..	42				27	15
		Rohree ,,	..	377				216	161
		Oomercote ,,	..	38				18	20
		Nuggur Parkur ,,	..	81	2,344	841	..	38	43
		Halla ,,	..	75				42	33
		Mahomed Khan's Tanda ,,	..	174				116	58
		Boola Khan's Tanda ,,	..	88				49	39
		Meerpoor Buttora ,,	..	273				174	99
		Alliyar-ka Tanda ,,	..	115				76	39
		Khetty Bunder ,,	..	58				33	25
		Taroosha ,,	..	254				167	87
		Mittee ,,	..	16				12	4
		Tatta ,,	..	20				14	6
		Total	4	10,681	9,622	1,059	..	6,196	4,485
5	Aden	Aden	1	628	799	..	171	441	187
		Grand Total	24	34,969	36,697	..	1,728	20,078	14,891

* Municipal

No. III.—*continued.*

Total number Vaccinated, arranged according to											
Caste.					Age.		Result.			Ratio per cent. of Successful to number Vaccinated.	Number of Persons vaccinated by each Vaccinator.
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
1,090	1,901	88	62	270	1,757	1,654	3,265	64	82	95·6	3,411
766	887	9	2	38	1,291	411	1,615	65	22	94·0	1,702
690	781	..	....	19	1,369	121	1,434	25	31	96·2	1,490
90	762	9	2	30	679	214	810	47	36	90·7	893
17	87	1	11	....	49	67	88	10	18	75·9	....
363	314	..	....	....	447	230	641	36	....	94·7	....
....	11	..	....	....	....	11	4	2	5	36·4	....
194	221	..	....	....	293	122	405	7	3	97·6	....
58	134	..	....	....	93	99	173	3	16	90·1	....
43	120	..	....	....	65	98	148	15	....	90·8	....
12	30	..	....	....	4	38	42	....	....	100·0	....
157	220	..	....	....	163	214	362	3	12	96·0	....
27	11	..	....	....	14	24	34	4	....	89·5	....
73	8	..	....	....	64	17	62	11	8	76·5	....
40	35	..	....	....	27	48	73	2	....	97·3	....
64	110	..	....	....	31	143	155	4	15	89·0	....
20	68	..	....	....	48	40	67	17	4	76·1	....
41	222	1	....	9	84	189	269	....	4	98·5	....
59	56	..	....	....	29	86	102	10	3	88·7	....
14	44	..	....	....	14	44	31	6	21	53·4	....
75	179	..	....	....	79	175	227	2	25	89·4	....
13	3	..	....	....	1	15	16	....	....	100·0	....
20	....	..	....	....	13	7	20	....	....	100·0	....
3,926	6,204	108	77	366	6,614	4,067	10,043	333	305	94·0	1,874
55	44	10	....	519	142	486	416	190	22	66·2	628
22,464	9,980	532	321	1,672	19,069	15,900	31,637	1,710	1,622	90·5	1,191

Vaccination.

TABLE

General Abstract of Vaccination

Designation of Tables.	Number of Vaccinators.	Total number Vaccinated.	Compared with last year.			Sex.	
			1866.	Increase.	Decrease.	Males.	Females.
No. 1. Vaccination under Superintendents in British Territory by Government Establishment....	134	239,446	236,964	2,482	..	127,118	112,328
Do. do. Local and Municipal Do....	* 33	34,168	31,093	3,075	..	18,788	15,380
No. 2. Ditto ditto and others in Native Territory	79	82,832	74,743	8,089	..	44,394	38,438
No. 3. Ditto under Civil Surgeons, &c., &c.....	† 24	30,731	36,697	....	1,728	17,491	13,240
Ditto in Dispensaries by the Medical Subordinates	..	4,238				2,587	1,651
Total....	270	391,415	379,497	11,918	..	210,378	181,037

* Work of thirteen Local

† Also shows work of five

No. IV.

FOR THE YEAR 1867.

Total number Vaccinated, arranged according to										Ratio per cent. of Successful to Number vaccinated.
Caste.					Age.		Result.			
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.	
183,100	39,707	1,221	1,012	14,406	96,315	143,131	224,881	6,214	8,351	93·9
13,103	19,489	23	3	1,550	11,631	22,537	32,183	967	1,018	94·2
70,529	9,715	152	5	2,431	32,560	50,272	76,574	3,885	2,373	92·4
20,557	7,833	434	282	1,625	17,218	13,513	27,872	1,464	1,395	90·7
1,907	2,147	98	39	47	1,851	2,387	3,765	246	227	88·8
289,196	78,891	1,928	1,341	20,059	159,575	231,840	365,275	12,776	13,364	93·3

and twenty Municipal Vaccinators.
Municipal Vaccinators.

TABLE No. V.

TABLE OF AGES.

Vaccination in 1867, arranged according to Ages, whether performed under or above One Year of Age.

ESTABLISHMENTS.	AGE.		DIFFERENCE.		Total Vaccinated.
	Under one year.	Above one year.	Under.	Above.	
I.—Superintendents in British Territory	107,946	165,668	....	57,722	273,614
II.— Do. and others in Native do.	32,560	50,272	....	17,712	82,832
III.—Civil Surgeons and others	19,069	15,900	3,169	....	34,969
Total..	159,575	231,840	....	72,265	391,415
I.—*Superintendents in British Territory.*					
Central Circle	22,419	52,738	....	30,319	75,157
Southern do.	8,577	37,889	....	29,312	46,466
Northern do.	46,326	23,209	23,117	....	69,535
Sind do.	18,214	37,461	....	19,247	55,675
Kattiawar do.	3,107	4,722	....	1,615	7,829
Rewa Kanta do.	4,231	3,736	495	....	7,967
Presidency do	5,072	5,913	....	841	10,985
II.—*Superintendents and others in Native Territory.*					
Central Circle	831	837	....	6	1,668
Southern do.	5,407	14,565	....	9,158	19,972
Northern do.	11,424	9,129	2,295	....	20,553
Sind do.	813	1,716	....	903	2,529
Kattiawar do.	11,513	20,533	....	9,020	32,046
Rewa Kanta do.	2,318	3,041	....	723	5,359
Bhooj	254	451	....	197	705
III.—*Civil Surgeons and others.*					
Tanna	54	122	....	68	176
Rutnagherry	564	738	....	174	1,302
Carwar	24	284	....	260	308
Vingorla	23	128	....	105	151
Surat	891	740	151	....	1,631
Broach	569	657	....	88	1,226
Alibaugh	75	125	....	50	200
Bandora	10	83	....	73	93
Coorla	45	32	13	....	77
Oorun	28	74	....	46	102
Callian	51	53	....	2	104
Bhewndy	46	32	14	....	78
Dapoolie	35	88	....	53	123
Sawunt Warree	6	52	....	46	58
Honore	12	47	....	35	59

Establishments.	Age.		Difference.		Total Vaccinated.
	Under one year.	Above one year.	Under.	Above.	
III.—*Civil Surgeons and others*—continued.					
Poona	1,368	654	714	....	2,022
Ahmednuggur	1,018	710	308	....	1,728
Sattara	553	791	....	238	1,344
Sholapoor	666	989	....	323	1,655
Dhoolia	630	178	452	....	808
Nassick	619	460	159	....	1,079
Belgaum	338	465	....	127	803
Dharwar	255	380	....	125	635
Kolapoor	401	1,350	....	949	1,751
Ahmedabad	2,804	1,469	1,335	....	4,273
Kaira	791	76	715	....	867
Rajcote	435	564	....	129	999
Dispensary (Ahmedabad)	2	6	....	4	8
Kurrachee	1,757	1,654	103	....	3,411
Hydrabad	1,291	411	880	....	1,702
Shikarpoor	1,369	121	1,248	....	1,490
Kotree	679	214	465	....	893
Dispensary (Kurrachee)	49	67	....	18	116
Do. Sukkur	447	230	217	....	677
Do. Jacobabad	....	11	....	11	11
Do. Larkhana	293	122	171	....	415
Do. Mehur	93	99	....	6	192
Do. Sehwan	65	98	....	33	163
Do. Jerruck	4	38	....	34	42
Do. Rohree	163	214	....	51	377
Do. Oomercote	14	24	....	10	38
Do. Nuggur Parkur	64	17	47	....	81
Do. Halla	27	48	....	21	75
Do. Mahomed Khan's Tanda	31	143	....	112	174
Do. Boola Khan's Tanda	48	40	8	....	88
Do. Meerpoor Buttora	84	189	....	105	273
Do. Alliyar-ka-Tanda	29	86	....	57	115
Do. Khetty Bunder	14	44	....	30	58
Do. Taroosha	79	175	....	96	254
Do. Mittee	1	15	....	14	16
Do. Tatta	13	7	6	....	20
Aden	142	486	....	344	628

TABLE No. VI.

EMPLOYMENT RETURN OF SUPERINTENDENTS OF VACCINATION FOR THE YEAR 1867.

CENTRAL CIRCLE.

Superintendents.—{ Assistant Surgeon P. S. TURNBULL, M.D.
" " R. LANGLEY, M.B. (*Acting*).

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	9	146	17	1,112	33 Villages visited and inspected.
February ..	5	108	15	808	25 do. do.
March	9	156	22	908	39 do. do.
April	8	152	19	2,712	58 do. do.
May.....	8	141	22	3,846	90 do. do.
June	1	176	19	366	25 do. do.
July.....	2	251	23	549	35 do. do.
August	2	176	10	321	11 do. do.
September ..	....	....	....	....	Consequent upon the withdrawal of Dr. Turnbull for service in the Abyssinian Expedition, the office during these months has been in charge of Assistant Surgeon Dunn, primarily, and Assistant Surgeon Langley, 22nd Regiment N. I., at Poona, subsequently, and there has been no active supervision in the districts.
October					
November ..					
December ..					
Total..	44	1,306	147	10,622	

NORTHERN CIRCLE.

Superintendent.—Mr. MUNCHERJEE BYRAMJEE COLAH, M.D. (*Acting*).

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	9	326	25	1,352	45 Villages visited and inspected.
February....	8	261	23	1,286	35 do. do.
March	4	318	27	1,603	42 do. do.
April	5	314	25	1,999	63 do. do.
May	4	436	23	1,819	46 do. do. Entered quarters for monsoon on 5th June.
June.....	5	143	11	881	19 do. do.
July	4	40	5	137	5 Villages visited and inspected.
August.....	3	....	3	....	.....
September ..	....	14	3	126	3 do. do.
October	....	6	1	25	1 do. do.
November ..	3	216	20	1,212	32 do. do.
December ..	5	321	24	1,429	55 do. do.
Total..	50	3,395	190	11,369	

SOUTHERN CIRCLE.

Spuerintendent.—Assistant Surgeon H. DAY, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	6	133	7	84	4 Villages visited and inspected.
February	3	59	5	146	6 do. do. The Supt. absent on privilege leave from 13th Feb. to 15th March.
March	8	129	9	584	11 do. do.
April	18	298	24	1,050	19 do. do.
May	17	312	25	678	46 do. do.
June	....	....	....	....	Monsoon. At Head Quarters.
July	....	....	....	....	
August	....	....	....	....	
September ..	....	....	....	....	
October	....	....	....	....	
November ..	....	....	....	....	Dr. Day withdrawn for Military duty, and although in charge of the Office, exercised no active supervision.
December ..	....	....	....	....	
Total..	52	931	70	2,462	

SIND CIRCLE.

Superintendent.—Surgeon J. PINKERTON, M.D.

MONTHS.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	19	193	25	2,448	107 Villages visited and inspected.
February	20	273	26	2,017	90 do. do.
March	8	266	10	457	9 do. do.
April	....	....	....	10	From the 14th March to 7th May, Dr. Pinkerton was at Kotree, in charge of the Civil Medical duties at that Station.
May	6	242	5	78	3 Villages visited and inspected.
June	7	304	9	233	12 do. do.
July	5	482	17	466	9 do. do.
August	....	....	....	17	....
September ..	3	24	3	76	4 do. do.
October	5	40	10	97	15 do. do.
November ..	13	149	18	983	41 do. do.
December ..	14	180	20	709	58 do. do.
Total..	100	2,153	143	7,591	

KATTIAWAR CIRCLE.

Superintendents.— Surgeon E. R. Butler, M.D. (*Absent in Europe*).
Assistant Surgeon A. M. Blomfield, M.D.

Months.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.
January	....	....	....	....	
February	....	....	....	....	
March	2	88	5	266	6 Villages visited and inspected.
April	12	158	20	1,190	28 do. do.
May	12	180	18	721	16 do. do.
June	6	89	9	369	9 do. do.
July	....	....	....	....	Monsoon.
August	....	....	....	....	
September ..	....	....	....	....	
October	6	89	11	437	12 do. do.
November ..	8	134	17	531	22 do. do.
December ..	....	....	....	....	
Total..	46	738	80	3,524	

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon J. T. Welsh, M.D.

Months.	Number of Stations visited.	Distance travelled.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.
January	....	....	....	....	
February	3	87	9	739	19 Villages visited and inspected.
March	2	63	5	62	3 do. do.
April	....	....	....	....	In medical charge of the Gujerat Bheel Crops and Dohud Jail.
May	....	....	....	....	
June	....	....	....	....	
July	....	....	....	....	
August	....	....	....	....	
September ..	....	....	....	....	
October	....	....	....	....	
November ..	7	96	10	948	28 Villages visited and inspected.
December ..	4	25	3	742	28 do. do.
Total..	16	271	27	2,491	

TABLE No. VII.

Castes in which Vaccination was performed.

Castes.	Number Vaccinated.
Christian	1,026
Hindoo	289,196
Mussulman	78,891
Parsee	1,341
Other Castes	20,059
Total	391,415

BOMBAY: PRINTED AT THE EDUCATION SOCIETY'S PRESS, BYCULLA.

No. 1813.

GENERAL DEPARTMENT.

Bombay Castle, 30th September 1868.

Letter from the Inspector General, Indian Medical Department, No. 1739, dated 25th May 1868—Submitting his Annual Report for 1867 on Vaccination throughout the Bombay Presidency, including Sind.

RESOLUTION.—Exclusive of Military Cantonments, the number of operations performed during the year throughout the Presidency, inclusive of Native States, amounted to 391,415, which exceeds those performed in the preceding year by 11,918. The details are given in the following table:—

	In 1867.	In 1866.	Increase.	Decrease.
Vaccination under Superintendents in British Territory by Government Establishments	239,446	236,964	2,482	.....
Vaccination under Superintendents in British Territory by 13 Local and 20 Municipal Vaccinators	34,168	31,093	3,075	.....
Vaccination under Superintendents and others in Native Territory	82,832	74,743	8,089	.....
Vaccination under Civil Surgeons, &c., &c. (including the work performed by 5 Municipal Vaccinators)	30,731	36,697	.....	1,728
Vaccination in Dispensaries by the Medical Subordinates	4,238			
	391,415	379,497	13,646	1,728
Deduct Decrease	.....	.....	1,728	.....
Net Increase	.....	.....	11,918	.....

2. Only 26,140, or 7·16 per cent., of the operations shown above were pronounced unsuccessful or doubtful. This result is better than that of last year, viz., 7·83. The proportion between the number of operations

performed on children under one year, viz., 159,575, and that on children above one year, viz., 231,840, is nearly as 41 to 59, which also indicates some improvement over the preceding year, when the ratio between the respective numbers of children under and above one year operated on was as 37 to 63. The number of males vaccinated being 210,378, and that of females 181,037, the relative proportion between the sexes, which in round numbers is 54 of the former to 46 of the latter, appears to have been much the same as usual.

3. From paragraphs 3 to 12 of the report, Government observe that, owing to the withdrawal of some of the Superintendents in consequence of the exigencies of the service, the supervision in some parts was not as complete as might be wished. But His Excellency in Council acknowledges with satisfaction the good progress made notwithstanding these difficulties. At the same time Government agree with the Inspector General in "the necessity there always is for active and unbroken supervision."

4. The results given in paragraphs 15 and 16* of the report are very interesting.

---

* 15. Exclusive of vaccination performed in military cantonments, the total number operated on during the year amounted to 391,415, being an increase over the previous year of 11,918. This must be deemed most satisfactory; for if the vaccination of the Bombay Presidency is practised in a population of about sixteen millions, it may be computed that the births annually may average four hundred and eighty thousand. If, however, of these one-seventh die before the period when vaccination is performed, there will remain about four hundred and ten thousand to be vaccinated; so that if the present rate was continued there would probably not be more than twenty thousand who year by year would go unvaccinated in this Presidency. It is true that the number has only gradually risen to the amount shown, so that a considerable number are arrears from former years; nevertheless, there can be no doubt the general results are most satisfactory, and would be more so could the actual state of population be ascertained, and more Vaccinators employed where shown to be required.

Number vaccinated.

16. As far as can be ascertained, the average cost of each successful vaccination to Government, in Government Circles, is five annas and seven pies; increased vaccination will bring this down still further, except in the city of Bombay, where, should compulsory vaccination be introduced, the private practitioners should be remunerated, as in England and Scotland, for each certified successful case.

Cost of vaccination.

5. In paragraph 17* of the report the average number of operations performed by each Vaccinator during the year is stated to be about 1,827. This does not appear to be correct. The number of Vaccinators employed in 1867 being 270, and the total number of operations performed 391,415, the proportion performed by each Vaccinator cannot exceed 1,450 in round numbers.

6. The greatest fluctuations in 1867 are observable in the Central and Sind Circles. The Governor in Council has read the report from the Central Circle with much interest, and the satisfactory result exhibited therein is creditable to the Officers concerned. From the report of the Superintendent in Sind, it appears that the total decrease in the British territory is 12,045, made up of that in the Government return, viz., 10,305, and in the local return 1,740, against which there is a partial set off in the increase in the Khyrpoor return, which is 1,554. The net decrease in the whole Province is reduced to 10,491. This considerable decline is to be regretted.

	Increase.		Decrease.
Central.....	9,494	Sind.....	10,305
Kattiwar.....	1,266	Southern.....	1,423
Rewa Kanta..	2,134	Northern....	803
Presidency ..	2,119		
	15,013		12,531
		Net increase..	2,482
			15,013

7. The returns of vaccination in the territories of Native Chiefs show an increase on the previous year of upwards of 8,000. This is, on the whole, satisfactory; but the Governor in Council observes that in Cutch the number of operations performed in the year by each Vaccinator amounted to only 176. The Inspector General, however, urges, in paragraphs 23 and 24 of his report, that the general system under the Native States requires

* 17. During the last seven years the number of Vaccinators employed and the amount of work have steadily, and *pro rata*, increased, as the following table will show :—

Year.	Number of Vaccinators.	Annual number vaccinated.
1861.....	201	259,668
1862.....	197	244,792
1863.....	203	267,995
1864.....	218	332,894
1865.....	245	358,178
1866.....	263	379,497
1867.....	270	391,415

131,747 more children were vaccinated in 1867 than in 1861, and an average of about 1,827 operations performed by each Vaccinator, or 6 per diem on every working day in the year.

considerable amendment, and, as the course necessary for perfecting the existing system, recommends (paragraph 25) that the Vaccinators employed by all the Native Chiefs should, if possible, be placed under the control of the Superintendents of Vaccination, and receive there pay on the Superintendent's certificates. In paragraph 26 the Inspector General shows the distribution of these States into the several Circles of superintendence. Before passing any decision on this proposal, the opinion of the local Political Officers should be obtained, through the Political Department. With regard to the concluding portion of paragraph 7, the attention of His Highness the Khan of Junjeera must be directed, by the Political Department, to the advantages of vaccination, with an intimation that a Vaccinator will be sent to his State, should he desire it.

8. Government observe with much satisfaction that twenty-five Vaccinators were maintained by Municipalities. The progress made in this respect is gratifying, and the Right Honourable the Governor in Council trusts that the extension of the system will receive the countenance and support of all public Officers interested in Municipalities.

9. Government also observe that Vaccinators are paid out of Local Funds only in Sind, where they seem to render good service. This example might be more generally followed, and the Governor in Council requests that the Revenue Commissioners will draw the attention of the Local Funds Committees to the advantages of increasing the number of Vaccinators.

10. The remarks in paragraph 31 of Dr. Arnott's report on the accuracy of the returns are satisfactory. The attention of Superintendents should be drawn to those contained in paragraph 32.

11. Government observe with regret that in the Southern Circle the vaccination of infants makes so little progress.

12. The remarks of the Inspector General regarding the character of the Vaccine Lymph sent out from England are of great importance, and will be communicated to the Secretary of State, whose attention will be drawn to the fact that the Lymph sent out in tubes has alone been found to be useful. The quantity sent out is reported to be still insufficient, and the Inspector General should be asked to report what quantity has been received in the last three years, and how much will be required.

13. The Governor in Council notices with pleasure that the services of the Superintendents have met with the approval of the Inspector General. It is also satisfactory to see that the Vaccination Establishments meet with the support of the Civil and Political Authorities.

14. The services of Kishenchund, a local Vaccinator in Sind, who was sent to Khelat, seem to deserve the commendation bestowed on him in paragraph 57 of the Inspector General's report. It is to be hoped that the Khan may be induced to take further steps in the matter.

15. In paragraph 59 the Inspector General recommends that, in the absence of a system of compulsory vaccination throughout the country, certificates of successful vaccination should, when there is no evidence of protection by small-pox, be exacted from all candidates for Government employment; and states that this arrangement has been for some time carried out in Madras, and has recently been adopted in the North-Western Provinces. Before passing any orders on this subject, the Governments of Madras and North-Western Provinces should be requested to favour this Government with copies of their proceedings in the matter, and the Commissioner in Sind and Revenue Commissioners should be requested to favour Government with their opinion and that of the Collectors on the proposal.

16. The subjects brought forward in paragraphs 58 and 60 to 67 of the report, viz., raising the scale of the pay of Vaccination Superintendents to a par with that received by Officers in Medical charge of Native Regiments, the grant of travelling batta to the Vaccinators, and the appointment of Assistant Superintendents selected from among the Vaccinators themselves, should be separately submitted.

17. The report for 1868 will be submitted by the newly appointed Superintendent General of Vaccination.

(Signed) M. J. SHAW STEWART,
Acting Chief Secretary to Government.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1868.

Bombay:
PRINTED FOR GOVERNMENT AT THE
EDUCATION SOCIETY'S PRESS, BYCULLA.

1869.

No. 2664 of 27th July 1869.

From The Inspector General, Indian Medical Department,

To The Secretary to Government, General Department.

Sir,—With reference to Memorandum, dated 14th instant, I have the honour, in re-submitting the annual Report on Vaccination in the Presidency of Bombay for the year 1868, prepared by the Superintendent General of Vaccination, to state, that the efficiency of the Department under that Officer is well displayed in the total increase shown to have taken place over the previous year, of 34,838 Vaccinations. In some few instances decreases have occurred, but they have been fully accounted for by the Superintendent General.

2. Referring to para. 12 of the Report, I beg to state that a Superintendent of Vaccination will not be withdrawn, except under pressing emergency, and a report on the subject will always be required. Dr. Pinkerton is correct in considering active supervision as the very life of this system of Vaccination.

3. The sanction of the Government of India to an improved scale of pay to the Department, generally, must be productive of much good.

4. In remarking on the Vaccination of Native States, Dr. Pinkerton, in para. 19, does not see how to alter the relationship between the Vaccinator and the Superintendent, but in some States he is not sure but that something could be done to improve matters. I think, with my predecessor, that some changes are desirable and might be introduced, but deem it advisable that the Superintendent General should at a future period give the result of his experience on this point. There is, however, one step in advance recommended by Dr. Pinkerton, namely, that Vaccinators entertained under Native States should neither be engaged nor discharged without the approval of the Circle Superintendent. This recommendation is well worthy the consideration of Government. I would also strongly recommend that the pay of Vaccinators of Municipalities should not be fixed or altered without reference to the Superintendent General, and that they should not be removed from their appointments without his approval; this latter appears to be very necessary, as the summary dismissal by a Municipality would involve the necessity of a sudden demand for a trained Vaccinator, not easily nor always obtainable.

5. The highly satisfactory state of vaccination in the State of Sawunt Waree, as alluded to in paras. 6 and 19, shows how much the individual interest of an Officer can accomplish with even the smallest means. The success of Vaccination in this district must be most gratifying to Colonel Schneider, and commends itself to the notice of Government.

6. Dr. Pinkerton pronounces in para. 24 very favourably on the general truthfulness of the returns, and there can be no doubt that malpractices of this kind are now becoming rarer, owing to the searching tests employed by Superintendents and others, to the interest taken in the success of Vaccination by the Civil authorities, and the general improvement which has taken place in the working portion of the Department.

7. It is impossible at the present day to speak with any accuracy as to the mortality arising from small-pox throughout the various districts of the presidency. In para. 25, this disease is shown to have visited, sporadically or in the epidemic form, all the Circles, except in the Kattyawar Country, where, apparently, the dread of the disease, which prevailed in the previous year, appears to have had the effect of causing parents to seek the aid of the Vaccinators.

8. Inoculation is reported to have been practised not only in Sind, but also, I regret to say, much closer to us, namely, in the Surat Zillah, where it is stated (para. 27) to be "almost continually practised." The two Native States of Bunsda and Dhurmpoor are noticed as never having had a Vaccinator within their boundaries. It is stated that from these two States the Inoculators enter the Zillah. The remedy here would appear to be to interest these Chiefs in the subject, to have some of the Inoculators, if possible, taught Vaccination, and then to entertain them as Vaccinators.

9. The prevalence of small-pox in the City of Bombay has been frequently noticed, and the introduction of a Vaccination Act is certainly most plainly called for; the subject of such an Act has been frequently before Government, and may be said to be now under advanced consideration.

10. The addition of five Vaccinators under Native States, namely, two by the Jam of Nownuggur, two by the Nawab of Joonagur, and one in the Sunkeira Mewas in the Rewa Kanta, and seven entertained by Municipalities, namely, Sangolee, Nassick, Indapoor, Bagulkote, Kulladgee, Panwell, and Malseerus is a most pleasing feature of the Report. I venture to think that an acknowledgment to the Chiefs and Municipalities, who have thus come forward, would be advantageous to the interests of Vaccination.

11. Vaccination paid for by Local Funds in Sind, calls for consideration, so successful has it proved; and I consider the Superintendent General's suggestions, as set forth in his para. 23, as worthy of consideration, when the Local Fund Act is brought into operation.

12. The state of the lymph in use throughout the Presidency is favourably reported on. Supplies have been received in Bombay and Aden from England. At the latter place, Vaccination has progressed satisfactorily, and numbers of manumitted slaves have enabled the Medical Superintendent there to keep up a full supply.

13. The change recommended by Dr. Pinkerton in his para. 36, namely, that on the 1st of next January, the Sattara Zillah should be transferred to the Central Circle (Mahratta-speaking,) from the Southern (Canarese-speaking,) and Kulladgee Zillah to the Southern Circle from the Central, to which it at present belongs, should in my opinion be carried out.

14. I would beg to state in conclusion that this, the first report of the Superintendent General, gives evidence that his appointment will be followed by much good in the Department, and I cordially endorse his commendatory remarks on the several Medical Officers mentioned in his para. 35. Since the Report was penned, I regret to state that the death of one of these, described as a most promising officer, (Assistant Surgeon Ffolliott) has been reported.

I have the honour to be,

Sir,

Your most obedient Servant,

A. WRIGHT,

Inspector General, Indian Medical Department.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1868.

This is the first Annual Report submitted by the Superintendent General of Vaccination.

2. The report consists of—

Divisions of the Report.

1*st*.—A statement of the general working of the Vaccination Department :

2*nd*.—Extracts from the reports of Superintendents of Vaccination, Civil Surgeons, and others ; and

3*rd*.—Tabulated figured results.

Showing the composition of the Vaccination Department and source of Vaccine Returns.

3. The Vaccination department proper consists of 1 Superintendent General, 8 Superintendents, 134 Vaccinators, 1 English Writer, and 136 Peons.

Besides the above there are 18 Vaccinators employed under Civil Surgeons, and 4 under Staff Surgeons, some of whom have Peons to assist them and some have not. Within the last few years a number of Municipalities have entertained Vaccinators. Many Native States also maintain Vaccinators. Vaccination is also carried on at Charitable Dispensaries and in Regiments. I shall shortly notice the working, &c., of all those from whom I have received returns.

Changes.

4. The appointment of Superintendent General of Vaccination in the Bombay Presidency was filled up, for the first time, on the 22nd April 1868, but the appointment was sanctioned by the Government of India in their Resolution No. 7174,

dated 18th November 1863, and again confirmed in their Resolution No. 3378, dated 31st October 1868. The office establishment of the Superintendent General was sanctioned by the Government of India's Resolution, No. 2924, dated 20th October 1868. The pay of the Peons has been raised in the Presidency Circle from Rs. 7½ to Rs. 10, and in the other Circle by one Rupee per mensem, pending the revision of the Vaccination Department, the proposal for which is now before the Government of India.*

Superintendence.

5. The superintendence has been a good deal interfered with on account of the exigencies of the service, promotion, and sickness, as shown in the table below :—

Circles.		Superintendents.		Remarks.
No.	Name.	Rank.	Name.	
1	Central	Assistant Surgeon.	P. S. Turnbull, M.D.	Was absent in Abyssinia and took charge on 1st July, and held it till 21st November, after which he proceeded to Europe on sick leave.
		Do.	E. H. Langley, A.B.	Officiated from 1st January to 1st July.
		Surgeon	T. Miller, M.D.	Do. from 21st November to the end of the year.
2	Southern ...	Assistant Surgeon.	J. Raby	Took charge on 19th August.
		Surgeon	H. Day, M.D...	Officiated 3 months.
		Surgeon Major.	H. Pitman	Do. 4½ do.
3	Western.....	Assistant Surgeon.	H. J. Blanc, M. D.	Was a prisoner in Abyssinia, and after release went to Europe. He has never yet taken up his appointment.
		Assistant Surgeon.	T. Cody.....	Officiating since 14th October.
4	Northern. ...	Uncovenanted Service.	M. B. Colah, M.D.	Acting throughout the year.

† Since going to press the revision has been sanctioned by the Government of India.

Circles.		Superintendents.		Remarks.
No.	Name.	Rank.	Name.	
5	Sind.	Assistant Surgeon.	J. Ffolliott	Took charge on the 25th August.
		Surgeon	J. Pinkerton, M.D.	Held charge from the 1st January to 22nd May.
		Surgeon Major.	J. Gilbert	Officiated from 22nd May to 7th August.
		Do.	M. Style	Do. from 7th to 25th August.
6	Kattiawar ...	Surgeon	E. R. Butler, M.D.	In charge the whole year.
7	Rewa Kanta.	Assistant Surgeon.	J. T. Welsh, M.D.	Do.
8	Presidency..	Sub-Assistant Surgeon.	Anunta Chandroba.	Do.

6. In the Central Circle the Superintendent, Dr. Turnbull, for the first half of the year was on military duty with the army in Abyssinia, and in his absence Assistant Surgeon Langley carried on the office work, and also inspected some work done in the neighbourhood of Poona; he could not do more, as he held charge of H. M.'s 24th Regiment N. I., and could not absent himself from Poona camp. On returning from Abyssinia, Dr. Turnbull again took up his appointment on the 1st July, and carried on active superintendence until November, when he was compelled to proceed to Europe on account of ill-health, and the office duties were conducted by Dr. T. Miller, H. M.'s 4th (Rifles) N. I., until relieved by Assistant Surgeon Gordon on the 26th January 1869.

7. In the Southern Circle Surgeon Day resigned the appointment of Superintendent of Vaccination late in 1867, but continued to carry on the office work for the first three months of 1868. On his Regiment, 5th N. L. I., proceeding to Abyssinia, he handed over charge of the office to Surgeon Major Pitman, who officiated for about four months and a-half, until relieved by Assistant Surgeon Raby, who was appointed Superintendent on the 19th August. There was no active superintendence in this Circle until November

Neither Dr. Day nor Surgeon Major Pitman could travel in the districts, as they each held charge of a Regiment in Belgaum. In consequence of the number of Jagheerdars' and Municipalities' Vaccinators, no Circle demands closer or more energetic and systematic superintendence than the Southern.

8. In the Western Circle there was no active superintendence until Assistant Surgeon Cody took up his acting appointment. For some years past this Circle was divided between the Superintendents of the Central and Southern Circles, and as regards regular superintendence has been almost entirely neglected, except as regards the State of Sawunt Waree, which forms a part of this Circle. In it the Political Superintendent, Lieutenant Colonel Schneider, has taken great pains to spread vaccination, and under his fostering care, vaccination has made great progress. When I was in the State, I examined two large schools, and this is the result :—

Local Corps School	73	vaccinated.
	2	not vaccinated.
	2	doubtful.
Total...	77	Pupils.
No. 1 Maratha School	96	vaccinated.
	1	had small-pox.
	1	doubtful.
	1	inoculated.
Total...	99	Pupils.

In the Sawunt Waree State there is only one Vaccinator, but he has three Peons who vaccinate under his supervision; this plan seems to work very well, and though in our territory this system of having Peon-Vaccinators has been long abolished, yet I was so well pleased with what I saw, that I did not suggest any change to Colonel Schneider.

9. In the Northern Circle the superintendence under Dr. Colah was continuous.

10. In Sind there were several changes on account of my promotion to be Superintendent General. From May to August Surgeon Gilbert carried on the office work, and Surgeon Major Style also officiated for a portion of

August. Mr. Ffolliott took up the appointment on the 25th August, and commenced active superintendence about the middle of September.

11. In Kattiwar, Rewa Kanta, and Presidency Circles, the superintendence was uninterrupted.

12. The success of the Bombay system of vaccination depends in a great measure on steady and active superintendence. I know that the changes which occurred during last year were unavoidable, and I need do no more than express a hope that Superintendents will not be withdrawn from their vaccination duties except under very pressing emergencies: and when, from any cause, a Superintendent has to leave his appointment, I trust his place will be filled up as soon as possible.

Recommendations for improving the Department which were laid before Government during the year.

13. Since I was appointed Superintendent General of Vaccination, the Inspector General Indian Medical Department directed me to draw up in separate papers, for submission to Government, several recommendations for the improvement of the Vaccination Department, which had been previously laid by Dr. Arnott before Government in the last report, and which I may here put on record:—

1*st.*—It was recommended to place the Superintendents on the same footing as Regimental Medical officers as regards their pay. This was sanctioned by Resolution of the Government of India No. 1054, dated 24th February last.

2*nd.*—It was recommended to increase the pay of the Vaccinators and Peons. This has also been provisionally sanctioned by this Government's Resolution No. 832, dated 6th April last.*

3*rd.*—It has been recommended to grant to all itinerant Vaccinators and the Peons of the Superintendent General and Superintendents travelling batta. This is still before Government.

These improvements in the pay, &c., of Superintendents, Vaccinators, and Peons will do much to improve the Department. The Superintendents will now feel that they do not lose pay by remaining in the Department and will thereby be induced to remain content and to work well in it. The Vaccina-

* This has received the sanction of the Government of India which was made known by Resolution of this Government, No. 1035, dated 28th April 1869.

tors who have never before been well paid, will, I feel well assured, be grateful for the increase of pay, and will now value their places too well to carelessly risk the loss of them; previously many of them looked on dismissal from the service as little or no punishment at all. The pay of the Peons having now been put on the same footing as that of Peons in the Revenue department, they also will remain content and not constantly seek to leave the Department. In some of the Circles it was becoming difficult to get Peons on the old rate of pay. I no longer apprehend any difficulty in obtaining good men to fill the places of Peons.

I can scarcely express how great a satisfaction it is to myself and the Superintendents that Government has so liberally and readily granted the above boons, and I trust the Department will show by results that the liberality of Government is duly and thankfully appreciated.

Number Vaccinated.

14. Notwithstanding the broken and irregular supervision by Superintendents, there was again an increase in the number vaccinated by the Circle Vaccinators in 1868, as compared with 1867, or any preceding year. This I consider very satisfactory.

Working in Government Circles.

15. There has been an increase in the numbers vaccinated by Government Vaccinators in the Central, Southern, Northern, Sind, and Kattiawar Circles, and a decrease in the Western, Rewa Kanta, and Presidency. The increase and decrease in each Circle is here shown :—

		Increase.	Decrease.
1st.	Central	495	.....
2nd.	Southern.....	2,983	.....
3rd.	Northern.....	2,921	.....
4th.	Western	.....	4,779
5th.	Sind.....	5,038	.....
6th.	Kattiawar	2,694	.....
7th.	Rewa Kanta	.....	460
8th.	Presidency	.....	228
		14,131	5,467
		5,467	
	Increase.....	8,664	

This increase is valuable, as it shows that the Government Vaccinators try to maintain and even exceed the amount they have hitherto annually done, and I hope it also shows that vaccination is being more appreciated.

The number of the Government Vaccinators was the same as in the preceding year. The greatest increase was obtained by the Native Chiefs' Vaccinators, as shown below, in their Circles :—

		Increase.	Decrease.
1st.	Central	..	66
2nd.	Southern	4,117	..
3rd.	Northern	2,527	..
4th.	Western	..	925
5th.	Sind	..	424
6th.	Kattiawar.....	6,977	..
7th.	Rewa Kanta.....	1,724	..
8th.	Kutch	..	81
		15,345	1,496
		1,496	
	Increase.....	13,849	

This is a great increase, and the credit is chiefly due to the Kattiawar and Southern Circles; but there was an increase of at least five Native Chiefs' Vaccinators in 1868.

Causes of the increase.

16. The reasons given by Superintendents for the increase in Government establishments are: in the Southern and Northern Circles the prevalence of small-pox inducing the people to seek after vaccination, and increased industry of the Vaccinators themselves, called forth by the presence of small-pox in several portions of the Circles. In Sind, the Superintendent attributes it to the immigration into Sind of unprotected persons from neighbouring States on account of the famine, who submitted themselves to be vaccinated; and he fears that next year the number may not be maintained. No reason is given for the increase in Kattiawar, and the Superintendent thinks that the establishment is not likely ever to do more, or much more, work annually, than was done in the year under report. I apprehend that the reasons of the great increase in Native Chiefs' establishments are—1*st*, increased efficiency of the Vaccinators; 2*nd*, presence of small-pox, and a better system of working; and the same remarks apply to Municipal Vaccinators and Dispensary; and 3*rd*, increased number of Native Chiefs' Vaccinators.

17. The decrease in the Rewa Kanta (460) and Presidency Circles (228) is too small to be attributed to any particular reason; on the other hand the decrease in the Western Circle is large, 4,779, and is explained by the Superintendent in this way :—" To account in some measure for this decrease, I may say that one of the Vaccinators, General No. 38, Babajee Yadew, performed fewer operations by 2,000 this year than in the preceding year. Again, I had to take away another of the men from his work to join my office, and consequently the total is less by the amount of work he would have done in the two last months of the year."

Causes of decrease.

18. The greatest increase was in the Kattiawar Circle, and the greatest decrease in the Western Circle. While I consider that Dr. Butler deserves all credit in Kattiawar for such a good year's work, I do not think Assistant Surgeon Cody responsible in any way for the decrease in the Western Circle, as he only held charge of that Circle for about two months at the end of the year, and I have no doubt that in the next report the Western Circle will hold a higher place.

19. Government has decided that the relation between Superintendents and Native Chiefs' Vaccinators shall remain as before with two exceptions (of minors whose territories are administered by our officers). I confess that it is difficult to see how to alter the relationship or degree of superintendence over Native Chefs' Vaccinators, and in one instance at all events I should be sorry to see it altered; I allude to Sawunt Warree: as long as the personal influence of Lieutenant Colonel Schneider exists in that state, no change could be an improvement, but rather the reverse: but the worst of this is that Lieutenant Colonel Schneider's influence for good is only personal; were he to go, matters would probably be as they are in most other States. As regards some other States I am not quite sure but something could be done to improve matters, anyhow the evolution of time alone will show what changes are required and suggest the remedies. I do not feel at present equal to suggesting any comprehensive changes, and prefer to wait until from experience I know the needs and wants of each State. In paragraph 22 I will make two suggestions in regard to Vaccinators of Native States and Municipalities.

Relationship between Superintendents of Vaccination and Native States' Vaccinators.

20. As there have been some changes in the numbers of Vaccinators employed by Native Chiefs, I give a list showing by Circles, the Native Chiefs who maintain Vaccinators, and the number of Vaccinators kept by each Chief :—

List of Native States' Vaccinators.

Name of Circle.	Name of Chief.	Number of Vaccinators maintained in 1868.	Total.
Central	Raja of Aukulkote	1	
,,	Begum of Peint	1	2
Southern	Jagheerdar of Bhore (Sattara Zillah.)	1	
,,	,, Attapadee (Sattara Zillah.)	1	
,,	,, Jhutt (Sattara Zillah.)	1	
,,	,, Phulton (Sattara Zillah.)	1	
,,	,, Sanglee (Belgaum Zillah.)	1	
,,	,, Koorundwar (Belgaum Zillah.)	2	
,,	,, Meeraz (Belgaum Zillah.)	2	
,,	,, Jumkhundee (Belgaum Zillah.)	1	
,,	,, Ramdroog (Belgaum Zillah.)	1	
,,	,, Moodhole (Belgaum Zillah.)	1	
,,	,, Veshalghur (Kolapoor State.)	1	
,,	,, Echulkurnjee (Kolapoor State.)	1	
,,	,, Kagul (Kolapoor State.)	1	
,,	,, Bourah (Kolapoor State.)	1	
,,	,, Torgul (Kolapoor State.)	1	
,,	,, Auzara (Kolapoor State.)	1	
,,	Under Political Agent in 4 Petahs (Kolapoor State.)	4	22
Western	Sawunt Waree State	1	
,,	Jowar State	1	2
Northern	Dehwan of Pahlunpoor	2	
,,	His Excellency the Nawab of Radanpoor	1	
,,	Chiefs of Tharrud, Deodur, Wao, Tehwarra, Warriye, Santulpoor, Charchut, Sooegaum and Morewarre	1	
,,	Paid out of Fine Fund by Political Superintendent	2	
,,	His Excellency the Maharaja of Edur	2	
,,	Talookdars of Mahee Kanta	3	
,,	His Excellency the Nawab of Cambay	1	12
Sind	His Excellency Meer Ali Moorad of Khyrpoor	1	1
Kattiawar	Thakore of Bhownuggur	8	
,,	Nawab of Joonaghur	6	
,,	Jam of Noanuggur	4	
,,	Thakore of Goondul	3	
,,	,, Morevee	1	
	Carried over	22	39

Name of Circle.	Name of Chief.	Number of Vaccinators maintained in 1868.	Total.
	Brought over.....	22	39
Kattiawar—(*cont*).	Thakore of Limree	1	
„	19 Chiefs of Jaitpoor	1	
„	Rana of Porebunder	1	
„	Thakore of Wullah	1	
„	Raj of Drangudra	1	
„	Thakore of Lukhtur	1	
„	3 Chiefs of Bantwa	1	
„	Thakore of Wudwan.....	1	
„	„ Rajkote	1	
„	„ Jhusdun.....	1	
„	4 Chiefs of Bujjana, Dussara, Wunode and Jeegoovara.....	1 1	
„	3 Chiefs of Joonaghur, Deedan and Jafferabad.....	1	
			35
Rewa Kanta.....	Raja of Rajpeepla	2	
„	„ Chota Oodeypoor	1	
„	Nawab of Balasinore and Raja of Loonawarra	1	
„	Raja of Soonth and Thakore of Kuddana..	1	
„	Barrea Tribute	1	
			6
Kutch	His Highness the Rao of Kutch	3	3
	Total.....	.....	83

The entire expenditure of these Vaccinators is disbursed by the Native States. There is an increase of at least 5 Native States' Vaccinators.

21. The following is a list of the Municipalities which employed Vaccinators during 1868 :—

CENTRAL CIRCLE.....	Poona	2
	Ahmednuggur	1
	Sholapoor	1
	Barsee	1
	Punderpoor	1
	Beejapoor	1
	Barramuttee	1
	Sangolee	1
	Nassick	1
	Carried over...	10

	Brought over.....	10	
CENTRAL CIRCLE—(*contd.*)	Bagulkote	1	
	Kulladghee	1	
	Indapoor	1	
		—	13
SOUTHERN CIRCLE	Khanapoor	1	
	Moon	1	
	Kurrar	1	
	Koregaon	1	
	Walwa	1	
	Malseerus	1	
	Belgaum	1	
	Hooblee	1	
	Gudduk and Battegerry.....	1	
		—	9
NORTHERN CIRCLE.....	Veerumgaum	1	
	Dholka	1	
	Ahmedabad	2	
		—	4
SIND CIRCLE	Kotree	1	
		—	1
WESTERN CIRCLE	Tanna	1	
	Panwell	1	
	Oorun	1	
		—	3
	Total.....		30

This is 6 more than in the preceding year, for although 25 were then reported, only 24 existed, for there never was a Municipal Vaccinator in Vingorla, and one of the 24 was only temporarily employed, and has now ceased to exist; so virtually this is an increase of 7. The whole of the expenditure on account of these Vaccinators is borne by the Municipalities.

22. I would beg to suggest that henceforth Native States' and Municipalities' Vaccinators should not be either engaged or discharged without the approval of the Superintendents of Circles. It seldom happens that the Superintendents are not consulted, but still I think it would be well for Government to sanction this arrangement. I am also of opinion that the pay of Municipalities' Vaccinators should not be fixed or altered without my approval, because, disparity of pay creates discontent; not that I would put them all on a dead level, but some method should be observed, and at present some of the Municipalities' Vaccinators receive a greater pay than do the Vaccinators serving under Civil Surgeons and Superintendents of Vaccination.

Local establishment.

23. The local establishment of vaccination in Sind has maintained its position for usefulness. There was an increase of 1,758 in 1868, which is about the number of the decrease in the year preceding. The establishment consists of 13 Vaccinators, and is the only one paid out of local funds. As soon as the new Local Fund Act comes into operation, I think it would be advisable for each collectorate to give an annual grant to increase the number of Vaccinators, and in other ways increase the efficiency of the Department, by the appointment of Native Assistant Superintendents, to aid the European officers in guiding, supervising, testing, and controlling the work of the Vaccinators.

Truthfulness of returns.

24. It affords me great pleasure to be able to state that the Superintendents have pronounced the returns to be generally free from any false names; some other kinds of errors have been, in several instances, noticed: as was stated in last annual report, one reason for no longer finding false names is the facilities afforded by capillary tubes for commencing work: but I am inclined to think the chief and best reason is that the Superintendents test Vaccinators' work closely by calling over, from the registers, in the villages, the names of vaccinated children; falsification cannot escape such a test. Only one Vaccinator was discovered in falsifying his returns, and he was in Kattiawar Circle, but the Superintendent does not say whether he was a Government or Chiefs' Vaccinator.

Small-pox.

25. Small-pox occurred both sporadically and epidemically in all Circles except in Kattiawar, and the reason why Kattiawar escaped, may be owing to the prevalence of the disease in that Province in 1867. I have no exact information before me on the subject of small-pox, nor do I believe that such information is obtainable from any source whatsoever at the present time; years hence, when registration shall have been continued regularly, we may hope to obtain exact information. All the information I have is of the most general kind, and is of such little use that I think it barely worth recording. Still in order to complete, as far as I can, this report, I will briefly summarize the information contained in the reports received from Superintendents and others. In the Central Circle there were 47,236 cases of small-pox reported, of whom 1,848 had been previously vaccinated; of the vaccinated 8·7 and of the unvaccinated 9·5 died; but I apprehend that these figures are of little or no value, as other eruptive diseases must have been included, for such a low death rate among the unprotected is quite unknown, where exact information has been obtained. In those instances in which I have myself collected information, the

death rate among unprotected has been from 20 to 25 per centum, and here it is only 9·5. In the Southern Circle the disease was epidemic in Beedee talooka in Belgaum collectorate, regarding which the Superintendent, from personal observation, says that the introduction of vaccination into Beedee talooka "is attended with the greatest difficulty, owing to the prejudices and non-belief in its efficacy." The disease was also epidemic in some parts of Canara collectorate, but "was not of long duration, nor has the mortality been reported as any way severe." Assistant Surgeon Raby, in his report, gives an instance where the inhabitants of a village noticed the protecting power of vaccination and eagerly brought their children to be vaccinated. He desired the inhabitants to mention the circumstances to all their neighbouring villagers. In the Northern Circle epidemic small-pox broke out at the end of 1867, and continued till the following rains. There is a table in the Superintendent's report showing when and where the disease existed, from which it appears that this Circle was only free of small-pox during the months of August and October. It appears from reports that the disease did not prevail to any great extent except in the collectorate of Surat, and the Superintendent attributes its continued prevalence there to the ignorant opposition of the people to vaccination, and to the continued practice of variolous inoculation. He thinks small-pox not at all an evil, inasmuch as an outbreak of it does more to convince the people of the good of vaccination than anything else, and he gives the following instance in point. The town of Sarode is divided by a deep ravine, one side of which is inhabitated by Mussulmans, who had never accepted vaccination; the other side is inhabited by Hindoos, who had availed themselves of it. When the disease appeared the unprotected Mussulmans suffered severely, while the protected Hindoos did not; this opened their eyes and the Mussulmans eagerly sought for vaccination, but so troublesome were they, that they would seldom allow of an inspection of the vesicles on the eighth day, or permit lymph to be taken from them. In Sind the disease has been sporadic throughout the year, but except in the towns of Roree and Sukkur it has not spread or caused much mortality. The disease was introduced into Roree from Bahawulpoor territory, and it appears that it was propagated in and around Roree by inoculation. The total cases were 300, and the deaths 31. It is very probable that a considerable portion of the 300 were protected by vaccination, as vaccination has been steadily practised for 10 or 12 years back in both Roree and Sukkur, hence the small mortality. Dr. Butler, Superintendent of the Kattiawar Circle, says: "I have neither heard of nor seen an outbreak of small-pox, although I have travelled 1,110 miles, and visited 132 villages;" but he saw two children who

had been well vaccinated and had both subsequently suffered from severe small-pox a few years ago. Had they not been vaccinated, they would probably not have lived for him to see them. In Rewa Kanta Circle an epidemic occurred in Halole in October and November, which caused several deaths. The disease was brought from the Guicowar's territory, where it was then prevalent.

In the city of Bombay small-pox is always prevalent, and I can see no help for this while vaccination is not compulsory. In such a large city, into which strangers from all parts of Asia and Africa come, it must in the very nature of things exist as a permanent evil.

Small-pox existed more or less at the following Civil Stations:—

Poona, a few cases in cold season.

Bagulkote, 30 cases in March, April, and May.

Hooblee, a few isolated cases in January.

Dhurrumgaum, 30 cases in Bheel Corps in May; all had been vaccinated and all mild.

Tatta, in November and December to some extent.

Vingorla, small extent in April and May.

Lymph.

26. Throughout the Presidency the lymph has been reported generally good, and in those instances in which it was observed to be degenerated, it was renewed as soon as practicable. Whenever a Vaccinator's lymph in any way deteriorates, he should at once ask for a fresh supply in tubes from his Superintendent; and I think it would be well for Superintendents regularly to exchange, with each other, supplies of lymph in tubes. It has been observed that exchanging lymph actually improves its power. No Vaccinator should ever work with deteriorated lymph, and every instance of a Vaccinator doing so should be reported to me; it would be far better for a Vaccinator to remain idle than vaccinate badly, for he not only gives a false security, but he brings good vaccination into disrepute.

Inoculation.

27. The Government have resolved not to make inoculation penal for the present; and I fear very much that this evil practice will never cease until it be made penal. In Sind, where the moral influence of all officials for years has been brought to bear against it, the practice still continues, to a small extent only it is true; and again in the Surat collectorate it seems to be almost continually practised. No instance has been noticed in any of the other Circles. It

would be unbecoming of me to again urge on the Government the advisability of making inoculation penal, so shortly after their recent decision on the subject.

In the Native States of Bansda and Dhurmpoor to the south of the Northern Circle, vaccination has never been regularly introduced, nor are any Vaccinators kept up in them. From these States inoculators enter the Surat collectorate and carry on their deadly work. Endeavours will be made to induce these States to employ Vaccinators. I have already communicated with the Governor's Agent on the subject, and perhaps he may be able to prevent inoculators intruding themselves into our territory, as well as be able to convince these two small States that it would be better to maintain Vaccinators than foster inoculators.

Total Vaccinations.

28. The number of vaccinations in civil life was 426,253
and in the Army 5,931

Total in Bombay Presidency... 432,184

but I will omit the army returns from the following calculations, as I have no previous returns to compare with those now submitted.

Success.

29. There is an increase of 34,838 vaccinations in civil life as compared with the year 1867; this I consider highly satisfactory, and it is very creditable to the whole department. Of the 426,253 operations 398,988 were successful, 12,789 unsuccessful, and 14,476 doubtful, or in other words, 93·5 per cent. of successful, and 6·5 of unsuccessful and doubtful; this is about the same as last year.

Sex.

30. There were 230,343 of males and 195,910 of females vaccinated, or 56 of the former to 44 of the latter. This disparity of the sexes exists in all Circles, and is about the same as in previous years. It is difficult to explain why the disparity is so great, and it is certain that the actual disparity of the sexes in the general population cannot be so great. I trust Superintendents, when testing records, will see that no errors are made in the columns for the sexes.

Caste.

31. In table VII. the number of each caste shown and expressed in percentages is 0·5 Christians, 73·7 Hindoos, 20·5 Mussulmans, 0·3 Parsees, and 4·9 other castes.

Age.

32 There were 177,276 under one year old and 243,978 above one year old vaccinated, or 41·1 of the former to 58·9 of the latter. This is nearly the same as

in the previous year. It is of much importance to vaccinate as early in life as possible, but I do not think that a much higher proportion of infantile vaccinations than this can be obtained. It is probable that about 70 in every hundred persons vaccinated were under two years old.

Cost.

33. I make out the total cost of vaccination in civil life to be in 1868 about Rupees 1,11,524, which gives Annas 4 and Pies 2 for each vaccination. In next report the expenditure will probably be larger, because Superintendents have in the current year held their appointments and the pay of the Vaccinators has been increased. In 1867 the average cost of each vaccination was stated to be Annas 5 and Pies 7, or 1 Anna and 5 Pies more than in 1868; this expenditure includes all establishments, Government, Native States, Local, and Municipal.

Assistance from Civil Authorities.

34. The Superintendents warmly acknowledge the assistance that they and the Vaccinators have received from the Civil authorities, and to their aid is due in a great measure the increase of operations in the past year.

35. I think there is every reason to be pleased with the result of the year's operations. I would beg to commend to the favourable notice of Government the zealous exertions of Drs. Butler and Colah, and although Assistant Surgeons Ffolliott and Raby have not been long in the department, yet their exertions are also very praiseworthy. Mr. Anunta Chandroba has also been most active and zealous at the Presidency, where he has many difficulties to contend with. I regret the temporary loss of the able services of the Senior Superintendent, Dr. Turnbull, who has been obliged to go to Europe for the benefit of his health.

36. With reference to myself, I have not much to say. During the rains I was in Bombay employed in revising the pay, &c. of the department, which though not difficult, was laborious. At the commencement of the cold season I visited Sattara, with the view of making inquiries in reference to a recommendation made by Dr. Turnbull to transfer Sattara Zillah to the Central Circle, and Kulladghee Zillah to the Southern Circle. On my tour I went through both Zillahs, and I met the Acting Collector of Sattara, Mr. Bosanquet, and also Mr. Havelock, Acting Revenue Commissioner Southern Division, who both agree with Dr. Turnbull's geographical and lingual reasons for recommending the transfer. The people of Sattara Zillah speak the language of the Central Circle, Maratha; the greater portion of the people in Kulladghee Zillah speak Canarese like a greater portion of the Southern Circle. The position of Sattara Zillah connects it closer with

the Central than the Southern Circle, and the position of Kulladghee Zillah is closer to the Southern than the Central Circle. Dr. Turnbull says that the language alone should be a sufficient reason for the transfer, because it is unknown to himself and his office people, and documents have to be often translated by the Collector of Kulladghee into English or Maratha. After having visited both Zillahs and having seen the Superintendents of both Circles, I would beg to recommend that on the 1st of next January, Sattara Zillah be tranferred from the Southern to the Central Circle, and that Kulladghee Zillah be transferred from the Central to the Southern Circle.

37. I marched through Sattara Zillah to Sholapoor, and on my way I examined the village registers at all my camping places, and saw some vaccinated children here and there. These registers are of immense use in showing the Vaccinators where there are unprotected children, and their usefulness will increase year by year. Dr. Turnbull in his report shows how he makes use of them; I commend his example to the other Superintendents. When at Sholapoor, I met Dr. Turnbull, who was laid up there with fever, which has since compelled him to proceed to Europe. From Sholapoor I marched through Kulladghee to Belgaum, where I met Mr. Raby, Superintendent of the Southern Circle, and there saw some vaccinations in the neighbourhood. Here the year closed, and I will, I hope, in my next annual report, be able to give a better account of my travels. I may say I had only two travelling months in 1868.

38. During the rains I occasionally visited the vaccine stations in Bombay, and I feel satisfied that nothing short of a Vaccination Act will ever do much to improve the state of vaccination in Bombay, but I need not say more on this subject, as it has already been laid before Government.

39. In table VIII. I have shown the number of vaccinations in the Bombay Army for 1868, for which information I am indebted to the Secretary to the Inspector General Indian Medical Department. This is the first time they have ever been incorporated with the annual report; hitherto an annual return has been submitted to the Commander-in-Chief only.

There was somewhat less vaccination in Regiments, Lines and Departments, but an increase in the operations in Cantonments and Bazaars.

J. PINKERTON, M.D., Surgeon,
Superintendent General of Vaccination, Bombay Presidency.

Bombay, 17th May 1869.

INDEX TO THE FOLLOWING REPORTS.

VACCINATION UNDER SUPERINTENDENTS.

	PAGE		PAGE
Central Circle	1	Sind Circle	32
Southern do.	7	Kattiawar do.	36
Western do.	16	Rewa Kanta do	43
Northern do.	20	Presidency Division	46

VACCINATION UNDER CIVIL SURGEONS.

	PAGE		PAGE
Tanna	48	Ahmedabad	65
Bandora	48	Khaira	66
Alibagh	49	Rajkote	68
Bhewndy	50	Veerumgaum	68
Rutnagherry	51	Dhurrumgaum	69
Vingorla	52	Dakore	70
Karwar	53	Kurrachee	70
Surat	53	Hydrabad	72
Broach	54	Shikarpoor	73
Poona	55	Kotree	73
Dapoolee	56	Shewan	74
Ahmednuggur	57	Jacobabad	75
Sattara	58	Sukkur	75
Sholapoor	59	Boola Khan's Tanda	76
Dhoolia	60	Tatta	76
Nassick	61	Kulladghee	77
Belgaum	62	Bagulkote	78
Dharwar	62	Bhooj	79
Hooblee	63	Aden	79
Kolapoor	64		

APPENDIX.

Vaccination under Superintendents in British Territory	Table	No. 1
Vaccination under Superintendents and others in Native Territory	,,	No. 2
Vaccination under Civil Surgeons and others	,,	No. 3
General Abstract of Vaccination for the year 1868	,,	No. 4
Table of Ages	,,	No. 5
Employment Return of Superintendents of Vaccination	,,	No. 6
Castes in which Vaccination was performed	,,	No. 7
Table of Vaccinations in the Bombay Army for the year 1868	,,	No. 8

VACCINATION UNDER SUPERINTENDENTS.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D.

Acting Superintendent.—Assistant Surgeon E. H. R. LANGLEY, B.A.

Do. *Do.* Surgeon T. MILLER, M.D.

Establishment.—Twenty-nine Vaccinators under Government, two under Native Chiefs, and twelve under Municipalities.

Population, 3,600,000. Total cost, Rs. 13,671-11-9. Average cost of each Vaccination, 4 Annas and 5 Pies.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1867	52,462	.....	.....	50,109	95·5
	1868	52,957	495	.....	51,001	96·1
Native Chiefs ...	1867	1,668	.....	.....	1,417	84·9
	1868	1,602	.....	66	1,495	93·3
Municipalities ...	1867	4,120	.....	.....	3,508	85·1
	1868	5,953	1,833	.....	5,241	87·3

Assistant Surgeon Turnbull, Superintendent of Vaccination Central Circle, having been reported sick on 21st November, I took over charge of his Office, as a temporary measure, and have no personal knowledge of the working of the establishment. From the above table it will be seen, however, that an increase in the number of operations has taken place over those for 1867, viz., in the Government establishment, an increase of 495 operations; in the Native States, a decrease of 66; and in the Municipalities, an increase of 1,833. The total increase in all being 2,262 for 1868.

2. On account of the Western Circle being formed, the Tannah Collectorate, and Sub-collectorate of Colaba were taken out of the Central Circle, and on that account the number of vaccinations seem considerably less than for 1867, the total for that year being 71,037, and including the operations in the Tannah Collectorate, against 52,957 for 1868 without the Tannah Collectorate. On that account also the number of Government Vaccinators is less by 7, that number having been transferred from the

Central to the Western Circle. Under the Municipalities there is an increase of 4 Vaccinators; 1 for Nassick, 1 for Kulladghee, 1 for Bhagulkote, and 1 for Indapoor. The Native States remain as last year, 2.

3. The percentage of success, as will also be seen from the table, is increased in the Government establishment, being 961, against 95·5 per centum for 1867; in Native States 93·3 per centum, against 84·9 for 1867; and in Municipalities 87·3, against 85·1 per centum for 1867.

4. *Small-pox.*—The following table shows the number of small-pox cases and recoveries, &c., which have occurred in the Central Circle during the past year. The total number of cases has been 47,234, of whom 45,388 were unprotected, and the total number of deaths was 4,431. Of the total, 390 were vaccinated in infancy, and 1,458 in after-life.

Statistics of Small-pox during the year 1868 *in the Central Circle of Vaccination.*

No.	Collectorate.	Total number of cases of Small-pox during the year 1868.	Of the total number were Vaccinated.		Of these died of Small-pox who were Vaccinated.		Of the total number were unprotected.	Of these died of Small-pox.	Total deaths from Small-pox out of the total number of Cases.	REMARKS.
			In Infancy.	In after-life.	In Infancy.	In after life.				
1	Poona	17,845	116	440	5	36	17,293	1,729	1,770	
2	Ahmednuggur ...	13,115	10	526	4	32	12,483	1,056	1,092	
3	Khandeish	13,263	115	472	4	26	12,676	1,004	1,034	
4	Kulladghee.....	3,011	55	20	3	7	2,936	525	535	
	Total.....	47,234	390	1,458	16	101	45,388	4,314	4,431	

Inoculation.—As far as I can learn inoculation has not been practised to any extent in this Circle.

5. Vaccination in Collectorates :—

Collectorats.	1867.	1868.	Compared with 1867.	
			Increase.	Decrease.
Poona	12,358	13,824	1,466	...
Ahmednuggur	18,748	17,315	...	1,433
Khandeish	15,056	15,110	54	...
Kulladghee	6,300	6,708	408	...

The above table shows an increase in Poona, Khandeish, and Kulladghee, and in Ahmednuggur a decrease. I do not know the reason of this decrease.

6. So far as I know the Vaccinators have conducted their duties satisfactorily The Vaccinator who has performed the largest number of operations was (General No. 40) Keshew Sudeshew, Assistant Vaccinator.

7. Capillary tubes have been in general use for conveying lymph from place to place and supplying Vaccinators, and have generally proved successful.

8. Of the total number, 27,753, or 52·4 per centum, were males; and 25,204, or 47·6 per centum, females.

9. The following table will show the percentage of each caste vaccinated during the year, as compared with the preceding one:—

Years.	Christian.	Hindu.	Mussulman.	Parsee.	Other Castes.
1867	0·2	90·1	4·1	0·1	5·6
1868	0·3	88·7	4·2	..	6·9

10. The number of infants operated on is greater in the year under report than in the former one, being 37·4 per centum for 1868, against 28·8 for 1867. The total number vaccinated below one year of age is 19,633, and the total above one year 32,324. So far as I can learn the registers have been well kept; no false entries have been discovered; and the lymph has been generally good.

11. The following table will show the area and the population of the different Zillas in the Central Circle:—

Name of Zilla.	Area in square miles.	Population.
Poona	2,711,333?*	1,093,693
Ahmednuggur	10,414	1,252,789
Khandeish	12,468	778,112
Kulladghee	12,810	613,479
Native States. Peint	960	26,167
Native States. Akulkote	Not	received.

The cost of each vaccination in the different establishments, the Government, Native States, and Municipalities in this Circle is, so far as I can make out, as follows: In the Government establishment the cost of each operation is one (1) anna six (6) pies; in the Municipal, four (4) annas one (1) pie; and in the establishment of Native States, two (2) annas eleven (11) pies.

? * Acres.

12. Native States.—On looking at the table at the beginning of the report it will be seen that a decrease, though small, has taken place during the year of 66 operations, and the percentage of success has been 93·3, against 84·9 for 1867. The Vaccinators under Native Chiefs are only two in number in this Circle.

13. After Dr. Turnbull's departure for England on sick certificate, he forwarded to me the following remarks :—

"1. It gives me much pleasure to be able to report favourably on the vaccine operations of the past ten months, viz. from the 1st January to the 1st November of the present year. I had anticipated a decrease, as compared with the preceding year, the latter having been successful beyond any preceding it. But thus far (1st November) the returns show an increase over those of the same period in 1867, and I feel confident that, when the returns for November and December are added, the increase will be even more marked. The total number of operations for the above periods of the past and preceding years are :—

1868	43,621
1867	43,649
Increase in 1868..	152

"2. In regard to the number of operations on infants, the return shows a very satisfactory increase :—

Number of operations on infants from 1st January to 1st November			1868.	16,377
Ditto	do.	do	1867.	11,732
			Total increase.	4,605

"This very large increase is, I think, in a great measure due to the system of village returns of the unprotected, &c. now in use in the Central Circle. Returns of this description, but in a very imperfect form, have long been in use in this Circle. About three years ago, however, observing the very imperfect manner in which these were filled up when called for, I determined to alter the form, and since then no difficulty has been experienced. In the old form merely the name, surname, and caste were required to be given, and the village officers contented themselves with merely writing a few names from memory and sending in the return. Now, however, they are required not only to give the name, surname, and caste, but they are required to give these particulars of every child in the village under ten years of age, and also to show in their respective columns whether the child has "been vaccinated," "had small-pox," or "is unprotected." When the name of a child has not been fixed, a space for it is to be left blank. The return may seem complicated, but after three years' experience of it, I am strongly of opinion that nothing short of calling for the name of every child in the village, under 10 years of age, will cause village officers to make out lists at all approaching completeness. These returns collected by the Mamlutdar are transmitted to me, and having stamped the leaves, and signed each return, I forward them to the Vaccinator for whom they are intended. By this return the Vaccinator is made

aware of the whereabouts of the unprotected children, and by a glance at it, knows that by going to a certain village, he will meet with a certain number of subjects for operation.

"3. In some large towns it is especially valuable; in the town of Parolla, for instance, in the Collectorate of Khandeish, a return recently received showed the names of over 1,200 children requiring vaccination. I might mention other instances, but it is difficult to do so from memory.

"4. To the use of this amended form I attribute, in great part, the very great increase in the number of vaccine operations during the past two years, not only the increase in the total number of operations, but also in the vaccinations performed on infants; and in addition to this, the Vaccinators report, unanimously, that but for the amended form of return, their labours would be much greater, and the results less satisfactory.

"5. Above I have shown an increase in the number of operations performed by the Government establishment, but taking the Circle as a whole, the returns show a still more satisfactory result. Compared with the same period (ten months) of the preceding year, the following gives the result:

Establishment.	Vaccinated in 1867.			Vaccinated in 1868.		
	Total.	Successful.	Under one year.	Total.	Successful.	Under one year.
Government.....	43,469	41,697	11,732	43,621	41,954	16,337
Municipal.....	3,143	2,709	1,357	4,776	4,177	1,982
Native States	1,467	1,235	723	1,163	1,075	548
Grand Total...	48,079	45,641	13,812	49,560	47,206	18,867

"This table shows that a total increase in the Circle, of 1,481 has occurred; which, considering that the increase shown in 1867 over 1866, was more than 9,000 operations, is very satisfactory. Infantile vaccination has been during the last four years steadily increasing. The above return shows an increase over the preceding year of no less than 5,055 operations; and a reference to the returns for ten months of 1864 will show that it is 12,000 more than were operated on in the same period of that year.

"6.—*Municipal Vaccination.*

"Vaccination under Municipalities has made very satisfactory progress during the ten months. As will be seen in the above comparative table there is an increase of no less than 1,635 operations. The Municipalities of Nassick, Kulladghee, Bagulkote, and Indapoor have entertained Vaccinators for the first time, during the past year.

"7.—*Local Funds.*

"Vaccination by this means has not yet been commenced. On receipt of the Government Resolution on vaccination for the year 1867, I at once put myself in communication with Collectors of the several Zillas. The Collector of Poona informed me that Rupees 720 had been included in the Budget for 1869-70 for vaccination. Replies from the other Collectors had not been received when I gave over charge of the Circle to Dr. Miller, 4th Rifles, on the 21st November.

"8. The office of the Superintendent was stationary in Poona for some months (during my absence in Abyssinia), in charge of Assistant Surgeon Langley, 24th Regiment N. I. I re-assumed charge on the 1st July. In the month of August I travelled to Sassoor, and examined the work (recent and fresh) of (General No. 37) Wamon Keshew, employed in the Poorundhur talooka, and also tested some lymph received from the Superintendent General on ivory points. The work of the Vaccinator was satisfactory in every respect. His lymph was good and active, lymph that had been received from England but a few months before my visit. The lymph received on ivory points was tested most carefully, and found quite inert.

"I returned to Poona, and in October I visited and inspected the work of (General No. 40) Keshew Sudeshwur, in and around Loonekund, in the Havilee talooka, near Poona, and in the end of October having despatched my kit previously, I left by train for the Sholapore districts. I inspected old work of (General No. 23) and made arrangements to enable (General No. 144) Mankoo Gunajee, to commence operations in Marheh talooka. I found the people very ignorant of vaccination, and the village officers rendered me the least amount of assistance possible. From the Marheh talooka I proceeded to Barsee, in the town and talooka of which little or no work had ever been done. With regard to the town, its Municipality employs a Vaccinator, and vaccine operations are also carried on, but to a very limited extent, by the Hospital Assistant in charge of the Dispensary. I minutely examined the work of these men, and found that of the Vaccinator satisfactory and his records correct. But the amount of work done was very small. The records of the Hospital were very incorrect, and I found that the Hospital Assistant was not an efficient Vaccinator. I instructed him, and it is to be hoped he will conduct his duties with more success, and with greater care, in the future. On inquiry I found that neither the Municipality, the Mamlutdar, nor the Patells and Koolkurnees had taken the slightest interest in vaccination, and that none of them had paid any attention to the representations, written and oral, made by the Vaccinator; in fact that the Vaccinator was trying to fight the battle single-handed. I, during my necessarily short stay, endeavoured to remove all this, as well as the apathy and indifference of the people. I held open air meetings in different parts of the town at which, as I always do, I read Government zahirnamas on vaccination, and explained to the people the benefit to be derived from successful vaccination. I had also a meeting with the Municipal Commissioners, who, at my suggestion, raised the pay of their Vaccinator from rupees 12 to rupees 15 per month, and gave him a permanent Peon to

assist him, on a monthly pay of Rupees 6. I also had a meeting at each of the schools, at the library, &c., and on each occasion took the opportunity of explaining vaccination to the assembled people. At the library meeting, which was held in the large school-house, several essays were read in the vernacular in favour of vaccination. At the termination I suggested that a paper be circulated in the meeting for subscription in aid of the library, which was done, and the result was satisfactory; Rupees 52 were subscribed on the spot, and one gentleman promised to supply a newspaper weekly. If the difficulties were great in the town, they were no less so in the villages of the Barsee talooka. I visited a large number of villages, and collected a great number of village officers, and explained the orders and wishes of Government on the subject of vaccination. But on the 11th November further work was stopped by an attack of remittent fever, which totally incapacitated me for work, and I was conveyed to Sholapore, where I gave over charge of the office to Dr. Miller, 4th Rifles, on the 21st November.

9. During the last ten months every assistance has been given by the Magistrates for the extension of vaccination, but especially by Mr. Bell, 1st Assistant Collector, Poona, whose aid has enabled the vaccinators to carry on operations much more smoothly, extensively, and satisfactorily than formerly."

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon J. Raby.

Acting Superintendent.—Surgeon H. Day, M.D.

Ditto. .—Surgeon Major H. Pitman.

Establishment.—Twenty-two Vaccinators under Government, twenty-two under Jagheerdars, and nine under Municipalities.

Population, 4,158,989. Total cost, Rs. 18,717. Average cost of each Vaccination, 4 Annas.

Establishment.	Years.	Total. Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1867	20,979	.....	.....	19,868	95·1
	1868	23,962	2,983	.....	22,744	94·8
Native Chiefs ...	1867	13,666	.....	.....	13,097	95·4
	1868	17,783	4,117	.....	17,068	95·9
Municipalities ...	1867	6,941	.....	.....	6,477	93·3
	1868	9,463	2,528	.....	9,095	96·1
Dispensaries	1867	.....	.....	.....	.....	.....
	1868	175	.....	.....	138	78·8
Kolapore State	1868	2,617	.....	.....	2,526	96·5

In submitting the Report on Vaccination for the year 1868, it is necessary to premise that the state of supervision, as mentioned in the 4th paragraph of the Inspector General Indian Medical Department's letter, No. 1406 of the 27th April 1868, in his report on vaccination throughout the Bombay Presidency for the year 1867, obtained till near September 1868, when I took over charge of the Department from Surgeon Major Pitman, who, in consequence of his holding a regimental charge, in addition to that of Acting Superintendent of Vaccination, was precluded from exercising any active supervision in the districts; so that during the year under review, and a great portion of the preceding one, the work of a few Vaccinators only has been inspected. Bearing this in mind, in commencing my tour, I deemed it expedient to visit as many of the Vaccinators as practicable, and examine the lymph in use, rather than make long sojourns in the talookas as testing their old work, and being then prevented seeing as many as I otherwise have done; and I believe this course has been fully justified by the results, which will be hereafter noted. I have, however, always carefully tested some months' work of each Vaccinator in a few villages, and had there been any great errors, or falsifications, I cannot but believe that I should have, at some time, met with them. In the above comparative table there is a considerable increase of vaccinations over that of any former year, from which it may be inferred that the natives are becoming more alive to the benefits of vaccination.

2. Before, however, this table can be easily understood, it is requisite to notice the changes that have taken place in this Circle during the year, necessitating, in order to compare the actual results with the year, an alteration of the number reported vaccinated, in the various establishments in 1867. In October last, Rutnagherry and Sawant Warree districts were constituted a part of the "Western Circle," hence it becomes necessary to deduct the total vaccinations performed in them for the year 1867, from the totals of that year. Also, this is required in comparing the work done under the Municipalities; for instance, in 1867 the number vaccinated under them was 6,941, deducting those vaccinated in Punderpore, which is not now in this Circle, 316, gives 6,625 as the correct number for comparison.

Excluding, then, Rutnagherry, the total vaccinations of the Government establishment in 1867, were 20,979, against 23,962 in the present year under report, thus exhibiting an increase of 2,983.

The total vaccinations performed in this Circle exclusive of all establishments, is 54,000; of these 51,571 are reported as successful, giving a percentage of success of 95·5, the exact rate which obtained in the Government establishment in 1867.

Deducting the number of operations performed, as above explained, in Rutnagherry, Sawant Warree, and Punderpore, from the total of 1867, there will be shown the true number for that year vacccinated in this Circle, as at present constituted, viz: 41,270; of which 39,179 were successful, or a percentage of 94·9; comparing this with the total 54,000 of the present year, there is exhibited an increase of 12,730, as also an increase in the percentage of successfully vaccinated.

3.—*Native Chiefs' Establishments.*

The number of vaccinations for the year 1867, exclusive of Sawunt Warree, was 13,666; and in 1868, 17,783, showing an increase of 4,117, of which 95·9 are said to be successful.

4. Under the "Municipalities" there is also an increase, which is extremely gratifying, amounting to 2,838, with a still higher percentage of success than is attained by either Government or Native Chiefs' establishments. This I consider admits of a ready explanation, both as regards the increase of numbers, and also of success, viz: *1st*, the better supervision of their work by some of the Municipalities, who, having to pay the Vaccinator, interest themselves occasionally in his work; *2nd*, the greater facilities for keeping up their lymph unimpaired, and may be the greater care taken in their operations, by reason of the supervision stated.

5.—*Dispensaries.*

Vaccination in Dispensaries was only commenced in October 1868, at least returns from that date only have been received; and from nearly all the Hospital Assistants in charge, frequent difficulties in procuring children for operating upon are reported. The truth, I am led to believe, is, that the Hospital Assistants, as a rule consider vaccination foreign to their duties, and therefore that they are not called upon to go into the town to vaccinate, but only to remain in the Dispensary.

6. In the combined establishments there were 26·5 under, and 73·4 per centum, above one year.

7. Of the sexes there were males 29,565, to 24,435 females, or 54·7 per centum of the former to 45·2 per centum of the latter, a result approximating to what obtained in the preceding year.

Comparative Table showing the area and population of each Zillah of the Southern Circle of Vaccination, and the work performed in each by the Government Establishment for the year 1868, *contrasted with the preceding year.*

No.	Names of Zillahs.	Number of Vaccinators.	Area of Zillahs.	Population of Zillahs.	Total Vaccinated in 1868.	Average of operations to each.	Successfully Vaccinated.	Percentage of Success.	Total in 1867.	Increase.	Decrease.
1	Belgaum	7	11,814	753,180	7,947	1,135	7,674	96·5	7,479	468	...
2	Dharwar	5	6,757	794,414	4,447	889	4,282	96·2	3,345	1,102	...
3	North Canara.	3	4,314	367,582	5,543	1,847	5,290	95·4	5,359	184	...
4	Sattara	5	8,349	970,442	6,025	1,205	5,498	91·2	4,796	1,229	...
	Total...	20	31,235	2,885,618	23,962	5,076	22,744	94·9	20,979	2,983	...

Comparative Table showing the work performed by each Vaccinator entertained by the Chiefs of the Southern Mahratta Jagheers, and the area and population of each.

No.	Names of Jagheers.	Number of Vaccinators.	Area in Miles.	Population.	Total Vaccinated in 1868.	Successfully Vaccinated.	Percentage of Success.	Total in 1867.	Increase.	Decrease.
1	Sanglee	1		1,73,383	741	704	95·0	668	73	...
2	Meeruz 1st ...	1		70,779	636	616	96·8	641	95	...
3	Do. 2nd ...	1		47,060	338	296	87·5	289	49	...
4	Koorundwar Elder 1st.....	1		29,786	482	467	96·8	322	160	...
5	Koorundwar Younger 2nd.	1		22,890	404	358	86·1	254	150	...
6	Moodhole	1		49,829	450	438	97·3	564	.....	114
7	Ramdroog	1		33,000	1,022	970	94·9	439	583	...
8	Jumkhundee ...	1		1,20,051	423	408	94·4	359	64	...
9	Bhore	1		1,11,729	676	667	98·6	642	34	...
10	Attapadee	1		58,980	466	465	99·8	440	26	...
11	Jhut.....	1		56,845	880	824	93·6	280	600	...
12	Fulton.....	1		49,314	913	857	93·8	851	62	...
13	Savanoor.....	1		8,977	.....	.....	.....	157	.....	157
		13		8,32,623	7,431	7,070	95·1	5,906	1,896	271

Comparative Table showing the work performed by each Vaccinator entertained in Kolapore State.

No.	Names of Jagheers.	Number of Vaccinators.	Area in miles.	Population.	Total Vaccinated in 1868.	Successfully Vaccinated.	Percentage of Success.	Total in 1867.	Increase	Decrease.
1	Veeshalghur	1		14,748	1,890	1,843	97·5	928	962	.....
2	Echulkurnjee ...	1		43,543	633	613	96·9	979	.....	346
3	Kagul	1		31,287	749	734	97·9	741	8	.....
4	Gudhinglaz	1		73,393	1,001	956	95·5	319	682	.....
5	Bowrah	1		29,845	1,262	1,197	95·0	1,392	.....	130
6	Panala	1		66,463	1,117	1,087	93·9	948	169	.....
7	Bhooderghur	1		54,794	1,343	1,323	98·5	1,047	296	.....
8	Seerole	1		1,05,022	652	610	90·4	523	129	.....
9	Torgul	1		21,653	504	470	93·2	883	.....	379
10	Auzara	1		.....	1,201	1,165	97·0	.....	1,201	.....
	Total of Kolapore State	10		4,40,748	10,352	9,998	96·5	7,760	3,447	855
	Grand Total.....	23		1,273,371	17,783	17,068	95·9	13,666	5,343	1,126

Municipalities Vaccination Return for 1868.

No.	Months.	Khanapore.	Moon.	Kurrar.	Koragaum.	Malwa.	Gudduck.	Belgaum.	Hooblee.	Malseerus.	Total.
		1	2	3	4	5	6	7	8	9	10
1	January	98	116	63	83	65	61	68	129	...	683
2	February	109	118	61	85	60	72	82	120	...	707
3	March	175	123	62	96	60	...	94	112	...	722
4	April	60	189	117	200	60	190	65	163	...	1,044
5	May	89	65	195	261	62	100	57	111	...	940
6	June	...	84	79	311	61	93	42	70	...	740
7	July	113	113	68	251	61	90	62	75	...	833
8	August	97	111	88	88	68	88	63	125	...	728
9	September	183	101	118	83	66	95	78	154	...	878
10	October	184	93	61	81	50	...	72	121	42	704
11	November	69	61	67	81	66	...	78	217	99	738
12	December	79	72	66	81	75	...	69	200	104	746
	Total 1868	1,256	1,246	1,045	1,701	754	789	830	1,597	245	9,463
	Total for 1867	716	937	589	985	564	657	746	1,375	...	6,569

8. In accounting for the increase of vaccinations during the year, it is incumbent on me to show first the changes and additions, which have occurred in the different establishments throughout the year, and to deduct such additions which have tended to promote the efficiency of the Department, giving to each their due share of importance, numerically considered, by which the actual result of operations performed by the establishments as they existed in 1867 will be seen contrasted with 1868. The additions, then, which have been included in the above return, and which were not in existence in 1867, or rather were not incorporated in the returns of the Southern Circle, are—

Number of Vaccinations.

1*st.*	Kolapore Station	2,617
2*nd.*	One Municipal Vaccinator	245
3*rd.*	One Vaccinator for Auzara Jagheer	1,201
4*th.*	Dispensaries	175
	Total	4,238

The total vaccinations therefore performed by Vaccinators whose work was included in the Southern Circle's Returns in 1867, are 4,238; thus leaving an actual increase still of 8,492.

Of this 8,492, as will be observed, 2,983 fall to the lot of the Government Vaccinators, of the remaining 5,509, the actual increase in the Chiefs' territories, is 2,916, and the increase under the Municipalities is, therefore, 2,593.

The cause of the increase in the Government establishment, I consider, in a great measure due—1*st*, to the prevalence of variola, more or less, in many parts of this Circle, and the consequent greater inducement of the natives to offer their children for vaccination; 2*nd*, active assistance from Assistant Collectors, and others, afforded in some parts; and, 3*rd*, increased activity of the Vaccinators generally, and the successful efforts they have made in responding to the representations that have been made to them.

9. *Chiefs' Establishments.*

From Table III. it will be seen that nearly all the Vaccinators have increased the number of their operations, and the Ramdroog Vaccinator has more than doubled what he returned in 1867. That the number of vaccinations performed by each, excluding many of those in the Kolapore State, is as great as what could or should be done, cannot be admitted; but when it is remembered that these men, as a rule, are badly paid, frequently receive little assistance, and have to combat the passive indifference, if not active opposition, of the people, allowances, I conceive, will be readily made; for instance, while inspecting the work of the Meeruz Vaccinator, in January last (which though not properly coming within the compass of the year, I may, perhaps, nevertheless, be permitted to relate), I remonstrated with him on the smallness of his returns, when I was simply met by the reply: "What can you expect sahib, when I am paid so little, and have nothing to look forward to." This man has been over 10 years in the Department, and receives Rs. 12 per month. Colonel Anderson, the Political Agent, happened to be encamped here at the time, to whom I represented the case, and the advisability of increasing the pay of the Vaccinators within his Political Agency. He with his usual readiness to render assistance in the cause of Vaccination in the States under his control, at once increased this Vaccinator's pay Rs. 3 per month, and promised to take into consideration the proposal for placing the Vaccinators of the Kolapore State on a footing approximating to that of Government Vaccinators, as soon as I should be in a position to submit the pay of each Vaccinator, with the recommended increase to each, proportionately to the length of service, and conduct of the Vaccinators. This, I regret to say, by reason of the delays in the transmission and receipt of letters in the districts, I have been as yet unable to do. This is the most pleasing feature I have to note in this report, for when Vaccinators see that an interest is being taken in them and their work by those in authority, it is a great inducement for them to endeavour to show by the results of their operations that they are not altogether unmindful of the boon, and a Superintendent has indeed a much greater hold on these men, in case of laziness or misconduct. I am in hopes, consequently, that should the proposal be carried out, the returns from the Kolapore State will be still further increased.

Of the vaccination in this State the Veshalghur man still upholds his reputation for doing the greatest number of vaccinations of any Vaccinator, either in Government or any other establishment. The Bhoodumgurh Vaccinator is, however, making commendable offers to become his rival in this respect. The reason, no doubt, why the Veshalgar Vaccinator does so much more work than any other is explicable from the

fact, as has been stated by former Superintendents, of a great portion of his districts lying below the Ghauts, where no, or very little, opposition is met with.

In contrast to the above statement respecting the increase of pay to the Meeruz Vaccinator, I regret to have to record that the Chief of Bhore has thought fit to reduce his Vaccinator's pay by Rs. 3.

The Sanglee Vaccinator is paid a higher rate than any Vaccinator, either in Government or other establishment, I wish I could add his work proportionately corresponded in point of numbers.

10. *Prevalence of Small-pox.*

No regular returns of small-pox are received. It has been reported from time to time as prevailing sporadically in all the Collectorates of the Circle, and in an epidemic form in the talooka of Beedee, in the Belgaum Collectorate, where, in passing, I beg to state, from personal observation, the introduction of vaccination is attended with the greatest difficulty, owing to the prejudices and non-belief of the people in its efficacy; also in parts of Dharwar and North Canara. From Dharwar, the Collector represented its prevalence to the then Acting Superintendent, Dr. Pitman, who, in consequence of epidemic small-pox raging at the same time in Canara and Beedee, where the Vaccinators were fully employed, was prevented despatching Vaccinators to the infected localities as quickly as otherwise would have been the case. The epidemic was not of long duration, nor has the mortality been reported as any way severe.

In inspecting a village of the Kolapore State I found a sporadic case of small-pox of the 15th day's duration in a child aged about 18 months. There were two other children in the same house who had been recently vaccinated, as well as others in the adjoining houses to these. At the time of my visit the disease had not extended. The inhabitants of the village, noting the circumstance, were so struck with the benefit of the prophylactic, that they eagerly offered their children for operation, but in other neighbouring villages little work had been done. Considering this a good opportunity of actively interesting the heads of the village and others in the work, I endeavoured to show them how much assistance they might render to their neighbouring villagers by showing them the efficacy of vaccination, an instance of which, it is scarcely too much to say, they had just witnessed.

11. In commencing my tour I bore in mind the districts that had been more particularly reported as being infected with small-pox of a severe form, and to these I repaired. In November I visited nearly all the talookas of the Dharwar Collectorate, from whence reports of variola had been received. Having inspected the vaccinations in Kuljhutjee, and parts adjoining, where the people appeared anxious for vaccination, I proceeded to Hooblee, and on to Gudduck, examining several villages on the road, in which the state of vaccination could not be worse. Very few children had been vaccinated, merely a small minority, and those that were, I was unable in most of the villages to get collected for inspection, though orders had been sent the day previously, so that I could not test any returns. I have represented this to the Collector, with

what result I am, as yet, unacquainted. At Gudduck I found matters in an extremely unsatisfactory condition. The Municipal Vaccinator was doing little or no work. In Betgherree, a large town near Gudduck, affairs were still worse, as regards vaccination. On the morning after my arrival I had appointed to inspect children in Betgherree. On my road I was told it was no use going there, as no children had been collected, nor would the people consent to vaccination. These two places, it is necessary to mention, are the great centres of small-pox, especially Betgherree, one or the other is seldom free of the disease, frequently it rages in an epidemic form, and from whence I am informed it spreads throughout the talookas. On inquiry into this state of things, I found, as had been represented to me, that the Vaccinator was irregularly paid, occasionally being kept in arrears for over three months, and, as he said, he was not sure that he should be paid at all. The Municipality promised amendment, and I was led to believe such would not again occur; but up to the date of this report, notwithstanding my representations to the Collector, it still obtains. From Gudduck I proceeded to Dumbull, into which vaccination had never been successfully introduced, and it was with considerable difficulty I could procure a few children for vaccination, so as to make a commencement. I have since been informed that the natives do not so much object now; their objection at first arising principally, as I conjectured, from fear. Next I travelled to Roan, into which a Vaccinator had also never made his appearance with any degree of success, and the natives plainly admitted they had no desire that he should. The Gokak Mamlutdar, with whom I had before come in contact, happened to be temporarily in charge here, and he readily promised his assistance to the Vaccinator, whom I subsequently ordered to proceed there. From this I traversed the talooka of Nowlgoond and Nurgoond, back to Dharwar. From thence through parts of Beedee, on to Chickoree and Baghwanee, in the Kolapore State, and, with the exception of Baghwanee, there is little more than ordinary deserving of mention. Having previously heard of the opposition I should be likely to meet at Baghwanee, the talooka Vaccinator was ordered to accompany me. At first I could not obtain a single child for operation, but after some explanation, ten presented themselves, and were vaccinated. At the end of the year I was at Kolapore, and had inspected the work of 14 Vaccinators, most of whose lymph was very good. The Meeruz Vaccinator, employed by "Anna Sâhib," was working with lymph of a very suspicious character. The vesicles were small and ill-formed, and the average success of his operations very small. After examining the work of the Sanglee Vaccinator, in whose returns I found two names had been entered as successful, which in reality were not so, the vesicles had not even *risen*, as the phrase is; I represented this to the Political Agent. I desired the Meeruz Vaccinator, abovementioned, to accompany me to Tasgaon, and take lymph from (General No. 88) Trimbuck Annunt, on whose lymph, as I had anticipated, I could rely. I also saw that this Vaccinator wasconversant with the manner of charging tubes. From thence I traversed the talookas of Khanapoor, Koregaum, Khatan, and Moon, of the Sattara district, inspecting and examining the work of the Municipal and other Vaccinators. Here the subject of the Municipal Vaccina-

tors requires more than a passing notice, under, as they are, the able and active control of the Deputy Collector, Sattara. These Vaccinators are paid out of the combined Municipalities' funds, each town or village of any size contributing its item to the general fund; they have consequently a kind of claim on the services of the Vaccinator, and it is most satisfactory to be able to state that, as far as I have been able to judge, they look after the Vaccinator's returns so minutely that they refuse not infrequently to pay him, till they receive the confirmation. I explained to many of them that I did not wish in the slightest degree to test work more than to see that it was satisfactory, and informed them that I implicitly relied on them for this part; but in many places an anxiety was evinced that I should thoroughly test the correctness of the returns. They in fact appeared proud of having a Vaccinator, whom they could in some sense call their own; and in Dehwarree complained that they could not have another, as one was insufficient for the two talookas; and I am now able to state that another Vaccinator is to be appointed permanently in those talookas. In the town of Mahimangurh, where formerly considerable opposition was experienced, the natives were so pleased with their Vaccinator's work (having as they said freed the town of small-pox) that they gave me a petition to the effect that, if I was satisfied with his work, they were willing, as his pay was so small, Rs. 15 per month, to increase it to Rs. 20. I have forwarded the petition, with my recommendation, to the Collector, but the Deputy Collector informs me he fears the funds will not as yet permit of this increase. Subsequently I inspected the work of the Phulton and Bhore Jagheer Vaccinators, both of whose lymph was so deteriorated that I at once ordered them, through the karbarree, to suspend work, and directed them to procure lymph from the Koregaon Vaccinator, who was working near those Jagheers, and whose lymph I had only a few days previously examined in all its stages. Reviewing then this statement of my tour, it will be observed, that in many parts the greatest obstacles, almost insurmountable, to the diffusion of vaccination are encountered, not only by a Vaccinator, but frequently by a Superintendent himself, and from many villages supplies of food even are with difficulty obtained, so much so as occasionally to necessitate a reference to the authorities. In how far the increase of vaccination is brought about by the countenance or otherwise afforded by the authorities, especially Europeans, in a district, is a question to be somewhat considered; and the good effects resulting from an official authority interesting himself in the work is witnessed in the parts of the Sattara Collectorate, above referred to.

In one or two places in the Sattara Collectorate, Kodowree and Mahimangurh, for example, I inquired how it happened that in these towns, where formerly no Vaccinator had been able to make progress, so little opposition was now experienced; they replied that the Assistant Collectors and others when visiting the districts, had invariably instituted inquiries about the Vaccinator's work, and the Deputy Collector had in one village himself tested the accuracy of the returns of the Vaccinator only a few days before my arrival; and they added, we now see the good effects arising from vaccination. In the Sattara Collectorate I have met with little difficulty, as a rule, in getting children collected in the different villages for inspection.

WESTERN CIRCLE.

Superintendent—Assistant Surgeon H. J. Blanc, M.D.

Acting Superintendent—Assistant Surgeon T. Cody.

Establishment—Fourteen Vaccinators under Government, two under Native States, and two under Municipalities.

Population, 1,726,191. Total cost, Rs.

Average cost of each Vaccination (estimate) 2 Annas and 5 Pies.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1867	37,061	..	..	35,907	96·8
	1868	32,342	..	4,619	31,442	97·1
Native States.....	1867	6,306	..	..	5,936	..
	1868	5,381	..	925	5,083	94·4
Municipalities ..	1867	..	..	..	..	..
	1868	410	..	..	391	95·3

The above return shows a large decrease this year in the number of vaccine operations, though the percentage of success is slightly increased. To account, in some measure, for this decrease, I may say that one of the Vaccinators (General No. 38) Babajee Yadew performed fewer operations by 2,000 this year than in the preceding one. Again, I had to take away another of the men from his work, to join my office, and consequently the total is less by the amount of work he would have done in the two last months of the year. These two facts dispose of a good portion of the decrease, whilst the remainder may be attributed to changing some of the Vaccinators from one district to another, and the time lost in doing so.

2. The greatest number of operations this year was performed by (General No. 157) Balloo Chalka, his total amounting to 3,940. I see by the printed report of vaccination for the year 1867 that Dr. Langley, then Acting Superintendent of Vaccination for the Central Circle, mentions this man as having performed the largest number of operations for that year in the Tanna Zilla, and also that Dr. Turnbull was highly pleased with his work. I have every reason to be so too, considering that out of such a large number of operations, the failures were so few, the percentage of success being so high as 99·7.

3. I would suggest that this man be rewarded in some manner for his steady and persevering industry, to encourage him to continue on the same course; and at the same time to stimulate others to greater care and perseverance in their work. General No. 28, Maljee Mulakur, also deserves great credit for the large number of his operations, 3,354, all of which he reports as having been perfectly successful.

4. The following shows the number of each caste vaccinated during the past, as compared with the preceding year :—

Years.	Christian.	Hindu.	Mussulman.	Parsee.	Other Castes.
1867	374	33,920	1,184	11	1,969
1868	441	28,957	1,352	26	1,564

By this it may be seen that an increase has taken place in the number of children vaccinated belonging to the Mussulmans and Parsees. Though slight, it may, I think, be taken as an evidence of these people having a growing tendency to avail themselves of vaccination. I merely speak from the figures ; for I cannot say that I have personally witnessed any desire on the part of either class to avail themselves of it, but on the contrary a steady opposition to any attempts to induce them to accept the operation.

5. The following table will show the total numbers vaccinated in each Collectorate, with its population, and area in square miles :—

Collectorate.	Years.	Area in square miles.	Population.	Operations in Numbers.
Tanna	1867	9,268	958,398	18,515
	1868	....	....	14,551
Rutnagherry..	1867	....	....	18,546
	1868	4,478	607,793	17,991

This table shows a decrease of vaccinations in the Tanna Zillah of nearly 4,000, while the difference in the Rutnagherry Zillah is not very material.

6. The cost of each vaccination, taking both Zillahs together, and calculating from the total expense of the establishment, appears to be about 2 Annas and 5 Pies.

Municipal Vaccinators.

7. There were only two Municipal Vaccinators in the Circle who sent me in returns. One was stationed at Oorun, where he was working under the Sub-Assistant Surgeon attached to the Dispensary, and getting on very well up to the month of September, when he left his employment without giving any reason. The other is stationed at Panwell, where he does not appear to be doing much good, as the total number of his operations for the year only reach 63.

8. The total number of vaccinations performed by both men only reach 410, and are arranged below, according to caste, &c. :—

Year.	Christian.	Hindu.	Mussulman.	Parsee.	Other Castes.	Total.	Percentage of Success.
1868	11	369	29	..	1	410	95·3

It will be seen that this percentage of success is below that of the Government Vaccinators. The cost of each vaccination appears to be 1 Rupee 1 Anna and 8 Pies.

Dispensaries.

9. I forward along with this report the different reports I have received from Dispensaries. The only ones that have reached this office up to the present time are from Bandora, Coorla, and Alibagh. The total number of operations at these Dispensaries was 780, of which there were successful 504 or 64·6 per cent.

10. I have received a number of small-pox returns, from which it appears the disease was very prevalent during the year, and also very fatal in the Collectorate of Tanna. The returns give a large number of children as having suffered from the disease who had been previously vaccinated. As I am inclined to doubt the accuracy of this statement, I will make further and fuller inquiry into it. In fact, I would have done so now, but the returns reached this office too late for me to make the inquiry before making out this report.

Native States.

11. There are two Natives States in this Circle where Vaccinators are employed, viz., Sawunt Warree and Jowar. In the former the total number vaccinated amounts to 3,673, of which there were successful 3,430, or a percentage of 93·3. In the latter the number of operations reached 1,708, of which there were successfully performed 1,653, showing a percentage of 96·7. The cost of each vaccination in the Native States appears to be about 1 Anna and 10 Pies.

12. Having joined the Department so recently, I am unable to speak from personal knowlege as to the progress of vaccination in this Circle; and am compelled to make this report more meagre in detail than I would wish it to be. I took up the acting appointment on the 14th October, and took over from Dr. Turnbull some old records he had belonging to this Circle. In conseqence of its work having been previously carried on by the Superintendents of the Central and Southern Circles, and there being no previous Superintendent for this Circle, I had no books or records to consult, nor predecessor to explain how the work should be carried on. Add to this, that I have no Vaccinator who had ever been in, or was at all conversant with office work, and of a necessity it will appear that my progress at first must have been rather slow. However, with the aid of the Superintendent General, I was able to get an office into some sort of working order, and then started on my tour of inspection.

13. The first work I examined was that of General No. 58, Mahdew Vaniek, in the talooka of Bassein. The town of Bassein, with a large number of villages in its neighbourhood, came first in order. I found the work here very well done, that is to say, what I saw of it, and the returns quite correct. I regret to say that small-pox prevailed there at that time to some extent. It was principally confined to a temporary village, erected and inhabited by the fishermen with their families, during the dry season, for their greater convenience in pursuit of their daily avocations. Its site is generally under water during the monsoon, and seems to be composed of mud caked by the sun's rays. It certainly seemed a most likely place to foster or beget an epidemic disease, for a more frightful stench I never experienced than assailed me on every side from the quantities of animal matter that were strewn about in every conceivable stage of decay. The people, too, I found were any thing but willing or anxious to have their children vaccinated; they readily enough produced the old operations for inspection, but were tardy, or rather unwilling, to have new ones done, though small-pox at the time was making its ravages amongst them. This, I think, may be attributed to the extra care and attention a child who has been vaccinated would be likely to entail on them, at this their busiest part of the year, rather than to any real objection they have to the operation itself.

14. The other portions of the talooka which I visited were I found comparatively free from this disease; the people were much more alive also to the benefits to be derived from vaccination, and showed me in comparison a far greater number of operations, all of which seemed well and carefully performed.

15. I next examined the work of General No. 296, Kondajee Mukumdrow. His returns I found correct, but his lymph was exceedingly bad. I renewed it for him with some points of English lymph I received from the Superintendent General of Vaccination for trial, and warned him to be more careful for the future. I must here mention the difficulty I found in collecting children for inspection in the towns of Bhewndy and Callian. The officials were eager enough to render every assistance in their power, but such good intentions were frustrated by the indifference of the people. In the smaller towns and villages I found it easy enough to see all, or nearly all, the operations the Vaccinator had performed, and was consequently in a position to satisfy myself as to the quality of his work; but in the larger towns I could not do this so easily.

16. During my tour I am sure I saw just as many children unprotected as were vaccinated. A good many of them no doubt were protected by small-pox and in a few rare instances I saw marks of inoculation, but this was propagating the evil that vaccination is intended to guard against. Looking at the fewness of the Vaccinators in such a large Collectorate as Tanna, it is impossible that it should be otherwise. There are only six men to meet the requirements of a district nearly 10,000 square miles in area, and having a population of nearly one million.

NORTHERN CIRCLE.

Superintendent—MUNCHERJEE BYRAMJEE COLAH, M.D. (*Acting*).

Establishment—Thirty-three Vaccinators under Government, twelve under Native Chiefs, two under Municipalities, and three Dispensaries.

Population 2,715,765. Total cost, Rs. 18,734-8-0. Average cost of each Vaccination, 3 Annas and 2 Pies.

Establishment.	Years.	Total. Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1867	68,282	..	..	63,293	91·2
	1868	71,203	2,921	..	65,403	91·8
Native Chiefs ..	1867	20,553	..	..	18,376	89·4
	1868	23,080	2,527	..	20,939	90·7
Municipalities ..	1867	1,253	..	..	1,176	93·8
	1868	2,175	922	..	1,999	91·9
Dispensaries	1867	..	..	..	..	..
	1868	200	..		178	89·0

Vaccination in this Circle has been carried on satisfactorily during the past year. The above abstract of the annual returns shows an increase of 2,921 in the number of children vaccinated by the Government establishment, and an increase of 2,527 in the operations performed by the Native States' Vaccinators. Comparing the totals of the last six years, it appears, from the subjoined table, that the past year's work exceeds slightly the total of 1865, the year in which the highest number was attained.

Years.	Total vaccinated by Government Establishment.	Total vaccinated by Native Chiefs' Establishment.	Total vaccinated by Municipal Establishment.
1863	49,346	16,317	None.
1864	67,487	19,564	None.
1865	70,212	20,118	160
1866	69,085	22,043	57
1867	68,282	20,553	1,253
1868	71,203	23,080	2,175

2. The increase in the several establishments though not very considerable, is yet creditable to the Vaccinators employed, and speaks well of their zeal and industry, inasmuch as it was attained under many adverse circumstances, which are stated in paragraphs 31 and 32 of this Report. It is, I believe, principally due to the unpleasant

prevalence of small-pox during the year bringing out many children for vaccination, who otherwise would have been kept out of the Vaccinator's reach; to a certain extent also, it may be attributed to the increased energy of the Vaccinators.

3. To this report is annexed a table which gives a comparative view of the work performed during the years 1867 and 1868, with some other particulars. From this table it appears that the majority of the Vaccinators have performed more work in the expired year than in 1867.

4. The total number of operations performed by the three establishments is 96,458; of this 60,212 were children under one year of age, and 36,246 above that age. This gives 62·4 per centum of the former, and 37·5 of the latter. Taking the sexes, the operations in males exceeds females, the percentage being 53·5 in males, and 46·4 in females.

5. As regards the general result, the percentage of success in the Government (91·8) and Native States' establishments (90·7) is almost the same as in last year. In the Municipal establishment it is 91·9, being two per centum lower than in the previous year. But I think the percentage is actually much greater, vaccinated children leaving their villages before the week day, or concealed by their parents through fear of lymph being taken from them, are entered as doubtful. In the greater part of the doubtful cases the result, according to my experience, is successful.

6. The lymph in use in this Circle is to all appearances good; the resulting vesicles are normal in size and appearance. It is not, however, so good as it was in past years, because the cicatrices are not so large, and in the course of two or three years they become very indistinct.

7. Three supplies of English lymph were received in the year under report. The first supply in capillary tubes was successfully used in Cambay in the month of February. The second supply was on ivory points; it was received in August; and on trial, failed entirely. The last supply, received almost at the close of the year, was partly in tubes and partly on ivory points; it was used at Mundul, and failed entirely. Supplies of English lymph, even when found successful, do not produce results equal to the lymph in general use, and are therefore not of any use. It is very desirable that endeavours be made here for procuring cow-lymph, and, if successful, the replacement of the ordinary lymph now in use by such fresh cow-lymph, would be very beneficial.

8. During the year supplies of lymph in capillary tubes were sent to the Staff Surgeons of Nusseerabad and Aboo Sanitarium, the Superintendent of Rajpootana Dispensaries and Vaccination, the Civil Surgeon, Kaira, the Medical Officer in charge of the 14th Regiment N. I., Mhow, to the Local Superintendent of Vaccination, Bombay, and to the Dispensaries of Dakore and Gogo.

9. The year was marked by the prevalence of a severe epidemic of small-pox. This disease made its appearance in December 1867 in this Circle. For the first two

months of 1868 it was not much known, but on the approach of the hot weather, it began to spread with marked vigour; and it was not till the rains set in that its virulence abated. It must not be understood that it has disappeared, for it is still lingering in some parts, and may again appear to a more or less extent during the hot months.

10. Epidemics of small-pox, though in their result very disastrous, are not without some advantages. If no human persuasion and example can teach a person the benefits of vaccination, a visit of small-pox in his family teaches him thoroughly. Hence each epidemic of small-pox establishes the advantages of, and makes many converts to vaccination.

11. In the last epidemic, and I believe it must have been the same in previous ones, the greatest prevalence of small-pox was in places which had resisted vaccination. In December 1867 it prevailed to a considerable extent in two populous villages of Jumbooseer talooka, viz.; in Sarode and Kavee. I took my camp to Sarode shortly after (in the early part of January 1868), and learnt the following particulars: Sarode is a large village, divided into two parts by a deep ravine; one part is called Tulput, and is chiefly inhabited by Mahomedan agriculturists and others; the other part, called Wanta, is inhabited by Hindoos, Kolies, &c. This latter, the Wanta portion, had admitted vaccination in former years, but the Tulput portion had baffled all the efforts of the Vaccinator, who seems to have been dismayed, and to have not visited the village again for the last three years. During the late outbreak most small-pox prevailed in the Tulput portion, and many deaths occurred there. On the breaking out of the disease, vaccination was eagerly sought after, and, before the Vaccinator could commence work, some of the villagers took their children to Broach for vaccination. Even during the last epidemic, whenever they got their children readily vaccinated, they were so annoying and troublesome, as not to show their children on the week-day following, but closed up their doors as soon as the Vaccinator was known to be in the street.

12. During epidemic seasons the greatest mischief always is found to occur in Kusba towns and cities, and it is in such places that, on the breaking out of the disease, people shake off their apathy, and admit vaccination. Occasional instances are known where the prejudice is so great as to make the people believe in the occurrence of small-pox as a divine dispensation. Such people oppose vaccination even during epidemic seasons, and to the entreaties of our vaccinators are said to have replied "*Jao Jee, kia toom Allah se bhi burrah ho ke?*" (Are you mightier than the Almighty God: go your way).

13. As an instance of extreme reluctance to vaccination, I would mention one case which occurred in this Circle. Small-pox broke out in Pahlunpore, a large and populous Kusba, about 18 miles from the important military cantonment of Deesa. There is a Vaccinator attached to this place, in charge of the Kusba and surrounding villages. He was working in Pahlunpore at the time of the outbreak, but with the view of checking the epidemic, the Government Vaccinator of Deesa Cantonment was

ordered to Pahlunpore. Both together commenced operations, but their combined efforts were successful to only a limited extent; for, working three days in a week in the Kusba, they could only get sixty children for Vaccination. The Mahomedan population resisted even during the epidemic. The Vaccinator of Pahlunpore, Dana Bhava, is now of twenty years' standing in the service. From my personal observation of this man, borne out by the testimony of another medical officer now high in the service, but who was for a length of time Superintendent of Vaccination of this Circle, I can say of him that in industry and zeal in popularizing himself and his art, in his personal demeanour to all, there is now no equal to him among the Native States' Vaccinators. Yet strange to say, at the time of the above occurrence, fault was found with him. From information, which must have been entirely incorrect, he was said to be inefficient, and not fit for the post, and his removal was desired. The loss would have been felt nowhere more than in Pahlunpore. I was able to make a satisfactory representation on the subject, and was allowed to retain this man in his post.

14. Though the carrying on of vaccination in a place infected with small-pox is beneficial, yet among ignorant people, such a proceeding is often more or less hazardous, inasmuch as it may bring discredit on vaccination by children already infected with the contagion of small-pox being vaccinated during or about the close of the period of incubation of the disease, and thereafter both diseases, variola and vaccinia, breaking out on the children, and it may so happen that a child, after being thus vaccinated, may have small-pox very severely and die. It is, therefore, of the utmost importance for this Department that it may receive all possible assistance from high influential quarters during quiet times, when no epidemic influence prevails, instead of such assistance being rendered to it in epidemic seasons only.

15. As to the extent to which small-pox prevailed in the different parts and towns of this Circle during the year, with the exception of reports received from our Vaccinators, I have no other good source of information. The following table contains the information thus collected:—

Months.	Ahmedabad Zillah.	Kaira Zillah.	Broach Zillah.	Surat Zillah.	Native States of Pahlunpore.	Native States of Mahee Kanta.
January.....	.....	Mhoonda ...	Jumboo-seer.	Chowrasee, Unklesur, Olpar.	.....	.....
February	Rampoor.	.....	.....	Chowrasee, Olpar, Mandvee.	Pahlunpore Kusba.	.....
March	Rampoor.	Mhoonda, Thasra, Cambay.	.....	Olpar, Bulsar, Mandvee, Bugwar.	Deesa, Pahlunpore, Rahdunpore.	.....

Months.	Ahmedabad Zillah.	Kaira Zillah.	Broach Zillah.	Surat Zillah.	Native States of Pahlunpore.	Native States of Mahee Kanta.
April	Rampoor.	Mhoonda.	.....	Olpar, Chicklee, Bulsar, Mandvee, Bugwara, Pardee.	Deesa, Phalunpore.	.....
May	.....	Mhoonda.	.....	Chowrasee, Chicklee, Mandvee, Olpar.	.....	.....
June	.....	.....	.....	Chowrasee, Mandvee, Olpar.	.....	.....
July	.....	.....	.....	Mandvee, Pardee.	.....	.....
August	.....	.....	.....	.....	.....	.....
September ...	.....	.....	.....	Mandvee.	.....	.....
October.....	.....	.....	.....	.....	.....	.....
November.....	.....	.....	.....	Chowrasee, Mandvee.	.....	Baid.
December	.....	.....	.....	Chowrasee, Mandvee.	Rahdunpoor Districts.	.....

The above is not a complete list. I believe, in addition to the places mentioned, small-pox must have prevailed in many other localities.

16. From what is reported, it appears that whereas small-pox prevailed in the other districts of this Circle to a limited extent, its occurrence in Surat districts was general. It is therefore of some importance to know what is the state and progress of vaccination in these districts. Of the Vaccinators I may say that they are as good and efficient as in the other Zillah ; many of them are old and experienced hands. That they are not inactive, and that vaccination in their districts is progressing, will appear from the following statistics of the past eight years :—

Years.	Total number of Vaccinations in Surat Districts.
1861	6,269
1862	8,359
1863	9,513
1864	14,584
1865	16,562
1866	18,717
1867	16,489
1868	19,129

It must be stated here that, comparing Surat with other Zillahs of this Circle, vaccination in it is attended with a great many difficulties, some of which were mentioned in paragraph 15 of my Report for 1867. But for the ignorant opposition of the people in many parts, the work each year would have been greater.

17. Notwithstanding all the efforts of this establishment to push on vaccination in the Surat districts, still there is always some amount of small-pox prevailing in these parts. And this is principally due to inoculation being still in favour with the people. There is no doubt that from year to year this injurious custom is practised, and I believe this keeps small-pox going. In epidemic seasons the contagion spreads easily, and the inoculators also getting more work in these times, become the principal agents for the propagation and diffusion of small-pox virus. During the past year two reports at short intervals were received from the Vaccinator of Chicklee regarding the carrying on of inoculation in the villages of Ranveree, Rankoova, and Tulaochora. These were, without loss of time, submitted to the Collector of Surat. Reports were also received from Bulsar; but these came very late (in September) after all the mischief was over.

18. In the whole of Guzerat, from Mount Aboo in the north, to Bugwarra in the south, and from Kutch and Kattiawar in the west, to the extensive territories in the east of His Highness the Guicowar, and the Political Agency of Rewa Kanta and Rajpeepla, vaccination is now being carried on steadily.

19. But there are two small territories in the southernmost part of Guzerat where vaccination is unknown. These lie to the east of the Chicklee, Bulsar, and Bugwarra talookas, and are the territories of the Rajahs of Bansda and Dhurrumpoor. They are surrounded on all sides by vaccinated districts. Their western boundary is already mentioned; to the north of the Bansda State is Guicowary territory lying very near to Walor of Bardolee talooka; to the east of the Bansda and Dhurumpoor States lie the Solgana and Peint States, in which last vaccination is carried on by the establishment of the Central Circle. To the east of Solgana and Peint States lie Khandeish districts. In these territories of the Rajahs of Bansda and Dhurrumpoor, which are not blessed with Vaccinators, reside the inoculators, who each year infest our territories, and do a great deal of mischief, by carrying on inoculation. Whilst I was in Surat, during the last rains, I called upon the Collector, who is also Agent for the Governor, and as such is the medium of communication with these States; I suggested to him the desirability of addressing the Durbars of the two States, to check the inoculators from coming into our territory.

20. To introduce vaccination in these Native States would not, I believe, be difficult. During the last epidemic the Vaccinator of Bulsar, being at the time very near Dhurrumpoor, was sent for by the Rajah, who had some of his children vaccinated. This is a hopeful sign. Endeavours will be made during the current year to make an advance in this quarter.

21. But it is my strong belief that a simple extension of vaccination in the quarter abovementioned will not result in the abatement, much less the suppression

of inoculation in the Surat districts. At present there is, I believe, a strong prohibitory order on every Patel of a village not to allow inoculation; nevertheless, it is being permitted; and when found out, and the case investigated, the invariable rule for the Patel and the people inoculated, is to state that the subjects of inoculation had gone to friends or relations in the neighbouring villages of the Bansda or Dhurrumpoor States, and were there inoculated. There will always be some inoculators prejudicing the minds of ignorant people, practising their injurious vocation, and thereby keeping up the poison of variola to activity. Nothing short, therefore, of making inoculation criminal, and prohibiting it by law, will meet the necessity of the case. Towards the suppression of what greater evil can Government interfere for the welfare of the people? Is not small-pox more highly contagious and more certainly destructive to the people than syphilis? and yet Government have passed an Act to prevent syphilis.

22. As regards this subject of inoculation, and the measures necessary for the more effectual spread of vaccination, I would quote here paragraph 3rd of my letter, No. 300 of 2nd October last, addressed to the Superintendent General of Vaccination, Bombay Presidency:—

"3. As to the best means of preventing small-pox from spreading, these may be briefly stated to be as follows:—

"*a.* Isolation of cases of small-pox.

"*b.* Suppression of inoculation.

"*c.* Legislative help towards the progress of vaccination.

"*d.* Re-vaccination.

"On each of these heads, I would make a few remarks.

"*a. Isolation of small-pox cases.*—The most efficient measure for checking the prevalence of small-pox would be the complete isolation of cases as they occur in any locality. This measure has been lately proposed by Sir James Y. Simpson, of Edinburgh, and known as the proposal for stamping out small-pox. The simple isolation of small-pox cases would be incomplete; there ought to be conjoined with it a thorough disinfection of the rooms occupied by small-pox cases and of their clothing and bedding in malignant and fatal cases; the entire destruction of the bed and clothing of deceased by burning ought to be enforced.

"*b. Suppression of inoculation.*—I am not aware to what extent this baneful practice of inoculation prevails in other parts of this presidency. In the southern part of this Circle, during each hot season, reports of its existence are made to me by the Vaccinators. I believe that this most injurious practice is being carried on pretty freely, though surreptitiously, in these districts. Inoculation is at all times pernicious in its results, but it is most so during epedimic seasons of small-pox, inasmuch as it multiplies the sources of contagion. It is therefore of the first importance to cause most stringent measures for the suppression of inoculation.

"(*c*) *Legislative help to Vaccination.*—Measures by which vaccination could be performed more efficiently and perfectly than at present would be auxiliary to the above. Vaccination in this Circle has been practised since 1830, and the people are now aware of it as an established institution. Nevertheless, it must be confessed that there is yet a vast amount of extreme indifference shown by the people generally towards vaccination. Unless found out by our Vaccinators, assisted by village officials, and vaccination almost forced on them at their very doors, people seldom come out willingly. Whatever vaccination is now performed is permitted by the people, under the belief that it is the desire of Government, and that they cannot avoid it. In some quarters where it is known that vaccination cannot be performed, unless permitted by the willing consent of the parents, there is direct opposition, and the efforts of our Vaccinators are set at defiance. In isolated villages of 50 or 100, or 200 houses, it is possible, by proper precautions, to completely vaccinate the population, though to do this requires no little effort on the part of our Vaccinators and the village officials. But it is impossible to do so in Kusba towns, or in large villages, having a population of 1,000 or 2,000 souls. In such places vaccination, as at present managed, is at best but imperfectly availed of. The best part of the morning is spent in going from one street to another in looking out for children on the day of vaccination, and similarly on the week day, to ascertain its results. The keeping up of lymph also from one week to another is one of great difficulty and anxiety. This statement will be borne out by the fact that in epidemic seasons, whereas solitary deaths occur in villages, the prevalence of small-pox and the mortality resulting therefrom is always most in Kusba towns and large villages. Government has for the past forty years carried on vaccination among the people, and sufficient has been done to make them appreciate its advantages. To further the progress of vaccination, and to assist the Department in extending it in all parts uniformly, it is necessary to make vaccination obligatory on parents by legislative enactment. Much of the time of Vaccinators now spent in coaxing the people would be beneficially employed in vaccinating.

(*d*) *Re-vaccination.*—Vaccination has now been for so long a time performed in these parts that it is very desirable to introduce re-vaccination. Children under one year of age who have been vaccinated, are likely to get attacks of small-pox when more than seven years old, more or less mild in form during epidemic seasons. Re-vaccination has been found in other parts of the world to be necessary to check the appearance of small-pox in such subjects, and it should be introduced in these parts also."

23. On writing the above, I missed the consideration of two important points, and I embrace this opportunity of mentioning them. Nothing can be more clear than this, that for the effectual performance of any work, the workers themselves *must* be efficient. To an ordinary observer the work of a Vaccinator is simple, and the mechanical part is really simple enough; but to ensure successful results, great discrimination is necessary in the selection of the lymph, and this requires considerable intelligence. Besides mere mechanical skill, other qualities are needed in a Vaccinator. He must, to a certain extent, be an educated man, possessed of a moral consciousness that he

has to do a work upon the proper performance of which will in a great measure depend the life of a human being. And he must also possess an unusual amount of patience and energy to quietly work his way over the prejudices of the people, and the tact to gain their confidence. With industrious and energetic habits, a conciliatory disposition is essential. It is not likely that men possessed of such qualities could be found to serve for very low wages. Up to May last the majority of the Vaccinators (Apprentices and Assistants) received Rs. 15 and Rs. 17 per month, and the Peons Rs. 7. This was low enough, but since May they have been receiving Rs. 12 and Rs. 14, and the Peons Rs. 5. Upon such scanty pay it is impossible for these people to maintain themselves and their families.

It is very necessary that for the efficacious performance of vaccination, the scale of pay of the Vaccinators be sufficiently high to secure good men, and to keep them above the necessity of begging gratuities from people. The subject of the revision of the salaries of the vaccination establishment is now under the consideration of Government, and the Vaccinators are anxiously awaiting to know the result.

24. To ensure efficacious performance of work, it is necessary that the supervision of the establishment be perfect. The experience of two years in this Circle has convinced me of the extreme necessity of better supervision of its Vaccinators. The Circle ought to be only so extensive as to enable a Superintendent to examine the lymph of the different Vaccinators every year, or at most every year and a half; whereas, this Circle is so very extensive as to require nearly three working seasons to complete an inspection of the work of all Vaccinators.

25. The extent of this Circle is shown in the following Statement, which contains the names of the different Zillahs taken from north to south, together with the area in square miles and population of each :—

Names of places.	Area in square miles.	Population.
Native States of Pahlunpore	6,041	304,493
,, Mahee Kanta	5,000	333,564
,, Cambay	432	175,000
Zillah Ahmedabad	4,415	679,761
,, Kaira	1,365	574,606
,, Broach	1,196	190,155
,, Surat	1,741¾	468,186
Total	20,190¾	2,715,765

26. And the following shows the total cost of vaccination in each establishment during the year, as well as the cost of each vaccination :—

Establishments.	Total number vaccinated.	Total expenditure during the year.			Cost of each vaccination.		
		Rs.	a.	p.	Rs.	a.	p.
Government.....	71,203	15,224	8	0	0	3	5
Native Chiefs	23,080	3,072	0	0	0	2	1
Municipal.....	2,165	438	0	0	0	3	2

Calculated as above, it appears that the cost of each vaccination in the Government establishment is greater than the others, but the chief expenditure in the Government establishment, viz., that of supervision, ought to be borne by all, inasmuch as all are placed under one Superintendent. Taking the three establishments together, the cost of each vaccination is 3 Annas and 2 Pies.

Total Vaccinations.	Total Cost.	Cost of Each.
96,458.	Rupees 18,734-8	Rs. 0 3 2.

27. To give a brief résumé of my tour : I was at the commencement of the year working at Ahmode, in Broach Zillah. My stay at Amode and at the next station, Jambooseer, was more prolonged than usual in the examination of the work of General Nos. 190 and 96. Finishing my work in Broach districts, I arrived at Karalee, and, crossing the Mhye, reached Salol on the other side of the river, and from thence travelled to the Native State of Cambay, and examined the work of its Vaccinator, Goolab Jumiet. Travelling from Cambay northwards, I encamped at Khanpore, in Kaira Zillah, for three days, and inspected most of the fresh work of the Cambay Vaccinator, as well as of General No. 127. Crossing the Saburmuttee by Boroo Mottee, I entered Ahmedabad districts, and travelled to Dhollera, Dhundooka, Rampore, and Dholka, inspecting work of several Vaccinators of the talookas named, (General Nos. 91, 170, 177 and 52). When I finished my work at Dholka it was quite the close of March, and as I had to be present at the Sessions Court in Broach in the first week of April, to give my evidence in a legal proceeding against a Vaccinator of this establishment, I closed work at Dholka, marched to Ahmedabad, and went down to Broach by rail, where I was detained only two or three days. I next took my camp to Unclesur, and commenced the examination of the Surat districts. The work of General No. 293 was thoroughly inspected from Unclesur, Panolee, Hansote, and Elao, which last place I left at the close of April for Mandvee talooka. From Turkesur, Jhamp, and Tursada, the work of General No. 248 was fully examined. From Tursada I travelled to Bardolee, from which place, and from Surbhon, the work of General No. 193 was thoroughly examined. Travelling southwards I entered Soopa talooka in the early part of June, and before the proper setting in of the monsoon had time enough to satisfy myself of the work of General No. 275. On the 15th June I was in Surat, my usual monsoon station, and occasionally went to some of the villages of Chowrassee talooka to inspect the lymph of General No. 19, and to take lymph for supplying the different Vaccinators of the Circle. I left Surat for the districts again nearly at the close of October, and

by the end of the year was able to inspect the work of General No. 309, in charge of Olpar talooka; of General No. 287 of Broach talooka, and of General Nos. 56, 20, 31, and 296 of Duskroe, Sanund, Veerungaum, and Mundul talookas, of Ahmedabad Zillah. To sum up, I inspected, in all, the work of twenty-two persons; of these 18 belonged to the Government establishment, one was a Native State Vaccinator, and two Municipal Vaccinators, of Dholka and Veerungaum, at which last place the vaccinations carried on at the Dispensary were examined. My travelling extended over 2,309 miles, 323 villages have been visited, and 11,716 children examined.

28. Of the twenty-two Vaccinators whose work was examined, the lymph of fourteen was found to be good; six Vaccinators were working with deteriorated lymph, which did not produce quite satisfactory vesicles, and one was working with very bad lymph. In every instance the lymph was discontinued directly, and replaced by good matter from neighbouring Vaccinators.

29. There have been in all five dismissals during the year, and these were necessitated by the following circumstances:—Hemutram Jugutram, of Wagra (General No. 235), and Trimucklall Kalidas, of Ahmode (General No. 190), were found to have been systematically misappropriating small sums of money to their own use instead of giving them to parents of children that were taken from one village to another for the purpose of carrying on arm-to-arm vaccination. Both of these were prosecuted for the offence, but only the latter was convicted, and sentenced to three months' rigorous imprisonment. Bhai Sunker Ghelabai, of Bardolee (General No. 183), was the Vaccinator who was working with very bad lymph. His faults as a Vaccinator were very grave. He studied more his ease and convenience than his duty, and used lymph on the 10th or 11th day; and, in order to evade detection, put false dates in his weekly and monthly returns. All his past work was very bad. It was discovered that he often sent his peon to the villages to carry on vaccination, instead of going himself to do his own work. His neighbour, Hurry Vulub Narunjee (General No. 275), the Vaccinator of Soopa, was found to have been falsifying his returns to a large extent. Both of them were therefore dismissed. Another Vaccinator, Sankleshrow Seevram, of Morassa (General No. 300), was dismissed the service on account of extreme laziness and misconduct.

30. In the Native States there have been very few changes. In paragraph 10 of my last report I had mentioned that in the Mahee Kanta territories, vaccination was carried on by four Vaccinators, but as these were unable to meet emergencies, the number of Vaccinators was increased from four to five. The new man was found to be utterly unfit; he did not get on smoothly with his work, and was constantly reporting himself to be ill, and losing his lymph. He was therefore discharged, and another candidate sent in his place. In Pahlunpore States one Vaccinator, Shumser Hassum, of the Kakhrej talooka, took ill in August, and following my advice went to Deesa, and put himself under the treatment of the Staff Surgeon. In October he reported that

he was somewhat well, but no sooner had he returned to his work, than he took again very ill, and died in November. He was one of the best men next to Dana Bhava, of Pahlunpore, and I therefore regret his loss. As early information of his death was received by me, I was able to make arrangements for the carrying on of work in Kakhrej talooka, and vaccination there has again been going on since the end of November.

31. There were many breaks in vaccination during the year; more than what is usual. The majority of these occurred after unusually heavy rains, and the consequent high floods in all parts of this Circle. Some of the Vaccinators were prevented from going to their week's work in consequence of their stations being surrounded by water; these lost their lymph entirely. Others were out on their week's work in villages, and were there weather-bound; these lost their lymph partially. The following is a list of places where lymph was lost, in consequence of the above-mentioned cause:—

Total loss of lymph.	Partial loss of lymph.
Prantage,	Veerungaum,
Dholka,	Sanund,
Morassa,	Dhundooka,
Bardolee,	Koth,
Soopa,	Ranpoor,
Chicklee,	Wagra.
Sadra,	Bulsar,
Hursole.	Pardee,
	Bugwara.

Some of them took measures themselves to obtain fresh supplies from neighbouring Vaccinators; to others, who could not do so, fresh lymph, in tubes charged by myself from the Chowrasee Vaccinator's fresh work, were sent. Many of them were able to resume work within two or three weeks of the break. One man, the Vaccinator of Prantage (General No. 154), lost much time; all the supplies of lymph sent to him were reported to have produced bad vesicles. I was ultimately obliged to direct him to go to a long distance, and procure good lymph from the Bavesie Vaccinator.

32. There was more sickness among the Vaccinators during the months following the floods, viz., in September and October. Some were laid up with guinea worms, others with axillary abscesses, and a few with fever, and lost their lymph in consequence. From August up to October were months of no little anxiety to me, for it was not till the month of November that nearly all were again in working order.

33. Making a rough calculation of the loss of time by different Vaccinators from the above causes, I find that in the Government establishment the loss is equal to the work of two Vaccinators for eleven months. In the Native States establish-

ments, the loss amounts to the work of two Vaccinators for eight months of the year. But for these breaks, the increase in the year's work would have been very considerable.

34. Of the Vaccinators of this Circle I may say, with the exception of a couple or so who are decidedly idle, nearly all are industrious. They have met my demands for increased work to their utmost capability, and their general conduct, as far as it has come under my observation, has been very exemplary.

35. In paragraph 29 of this Report I mentioned the circumstance of the dismissal of two Vaccinators for the misappropriation of money to their own use, instead of giving it to parents of children, carried for vaccine purposes from one village to another. My attention was drawn to the getting up of "remuneration putrucks" and of Forms V. 2, of all Vaccinators, and I found that the village Patels, whose business it was to attest the truthfulness of the forms, and thereby be a check on the Vaccinators, were in the loose habit of putting their signatures on them anyhow, even on blank forms, without ascertaining in the least to what statement their signature was required: thus the object for which these forms were introduced was lost. To remedy this evil, I addressed the four Collectors in this Circle, requesting them to make it known to all the Patels, through the Mamlutdars of talookas, that in no instance were they to sign blank forms, and that their duty was to acquaint themselves fully with what was written on the forms, and to refuse putting their signature to anything that was not true. This has now been done, and as much good as could result by making the object of the putrucks known is, I believe, now derived. Independently of this, a certain method is adopted of filling up these forms, and of checking the monthly returns, which now leaves very little room for exercising dishonesty.

36. From October last, in accordance with instructions contained in Circular No. 2,990, dated 27th August 1868, of the Inspector General, Indian Medical Department, the Vaccination Returns of three of the Dispensaries (Dholka, Veerumgaum, and Dokaré) in this Circle were received by me. These are incorporated in the yearly returns. Two Hospital Assistants only, viz., of Dholka and Veerumgaum, sent their annual remarks, which I beg to append in original.

SIND CIRCLE.

Superintendent—Assistant Surgeon J. Ffolliott.
Ditto Surgeon J. Pinkerton, M.D.
Acting Ditto Surgeon Major J. Gilbert.
Ditto Ditto M. Style.

Establishment—Seventeen Vaccinators under Government, fifteen Local, eighteen Dispensaries, and one under a Native Chief.

Population, 2,500,000. Total cost, Rs. 19,757-15-2. Average cost of each Vaccination, 4 Annas and 7 Pies.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
			Increase.	Decrease.		
Government	1867	33,821	....	....	32,353	95·6
	1868	38,859	5,038	....	38,053	97·9
Local	1867	21,854	....	....	21,022	96·2
	1868	23,612	1,758	....	22,966	97·2
Dispensaries	1867	3,069	....	....	....	87·3
	1868	3,365	296	....	3,144	90·0
Native Chiefs ..	1867	2,529	....	....	2,297	90·8
	1868	2,105	....	424	1,891	88·7

The results of vaccination in the Sind Circle during the past and preceding years are exhibited in the above table, from which it will be seen that there has been an increase in the Imperial and local returns of 7,092, as compared with the year 1867, and a decrease of 424 in the returns from the Khyrpoor State.

2. Deducting the work done in Dispensaries, which was not previously included in the returns from the Superintendent of Vaccination, the net total increase is 6,668 over the total number vaccinated in 1867.

3. The aggregate number vaccinated during the year 1868, has amounted to 67,941, of which 66,054, or 98 per cent. nearly, have been successful. These results are satisfactory; but we do not hope to show so large a number year by year until the population increases considerably. If the population of Sind (inclusive of the Khyrpoor State) is only 2,500,000, the number of children available annually for vaccination should be 60,000 only for some years to come. The past year has been exceptional, as in addition to sporadic small-pox which kept the Vaccinators constantly working hard to check it, a large influx of emigrants from the famine districts of Hindustan has furnished several thousand children for vaccination. These emigrants, even if they remain in the country, will not give the Vaccinators much additional work for some years hence, and the returns are likely to fall considerably below the numbers vaccinated in 1868.

Arranged according to Sex, there were				37,470 males,	or	54·4	per-centum.
,,	,,	,,	,,	30,471 females	,,	44·8	,,
,,	,,	Age	,,	24,428 under 1 year	,,	36·	,,
,,	,,	,,	,,	43,513 above 1 year	,,	64·	,,
,,	,,	Caste	,,	9,279 Hindoos	,,	13·6	,,
,,	,,	,,	,,	53,918 Mussulmans	,,	79·3	,,
,,	,,	,,	,,	4,727 Other Castes	,,	7·1	,,

This is nearly the usual percentage obtaining in Sind, and demands no special remarks.

4. The following table shows the cost of each successful operation, calculated separately for Imperial, local, and other establishments. As the former is debited with

the cost of administration, it is of course considerably the highest ; but taken in the aggregate, the cost of each successful operation is 5 Annas and 2 Pies only. Another table is appended, showing the cost of all operations, successful or otherwise.

5. Number successfully vaccinated by

Imperial Establishment ...	38,053	cost each	6 Annas 4 Pies.
Local	22,966	,,	3 Annas 11 Pies.
Native Chiefs.....	1,891	,,	3 Annas.
Dispensaries	3,144	,,	Nominal.

Total cost of each successful operation, 5 Annas and 2 Pies.

6. The quality of the lymph has been very good so far as I have inspected, and all the Vaccinators contrive to report favourably upon this point.

7. Small-pox has been sporadic throughout the year, but, except in the towns of Roree and Sukkur, it has not spread, nor caused much mortality. It was introduced to the former town in April, or early in May, by some boatmen from the Native State of Bahawulpoor, and appears to have been propagated both in Roree and some of the neigbouring villages by inoculation. The total number of cases ascertained by me to have occurred in the towns and districts during the past year amounts to over 300, out of which there were 31 deaths.

8. It is doubtful whether vaccination will be ever willingly and universally accepted by the Hindoos. Time and education may do a good deal towards enlightening them on the subject; but time and education have failed with Christians, and after a trial of 70 years it has been found necessary to compel its adoption in the country where it was first discovered and practised. No Brahman or Syud who ventures to reason on the subject can make a good objection to vaccination. As they both practice inoculation, the religious argument is a mere pretext, and of less force than custom, to which they are bound by prejudice. Mussulmans frequently object to it, on the ground of its affording less complete protection than inoculation to small-pox, and I have taken some pains to put them right upon this point, as there is only a half truth to support it. It is quite true that vaccination gives less protection against small-pox than inoculation, or a previous attack of the disease, but it affords much greater protection against an attack ending fatally.

9. The following tables by Dr. J. Thompson and M. Favart, compiled from statistics furnished of epidemics of small-pox in Europe, show the relative protection afforded by vaccination, inoculation, and a previous attack of small-pox :—

	Unprotected.	Small-pox a second time.	Small-pox after Vaccination.
Cases.....	205	71	310
Deaths.....	50	3	1
Proportion	1 in 4	1 in 23	1 in 310

Marseilles epidemic of 1828 reduced to an uniform scale of 15,000—

	Unprotected.	Previous Small-pox or inoculation.	Vaccinated.
Estimated number.	15,000	15,000	15,000
Attacked	7,500	150	1,000
Died	1,875	30	10
Proportion attacked	1 in 2	1 in 100	1 in 15
Ditto of Deaths to attacks ..	1 in 4	1 in 5	1 in 100

10. In the absence of any law enforcing vaccination in India, much may be done by Mooktyarkars, and other native officials, in securing the vaccination of all children within their jurisdiction. In large villages and districts there is usually little or no opposition to the Vaccinator; but in large towns he cannot get on without the personal assistance of the Mooktyarkhar or local native officials. While on this subject, I may remark that the people object very strongly to allow lymph to be taken from their children's arms; and forcing them to carry children frequently a long distance in addition, is often a real hardship. A more liberal allowance of glass tubes would be the remedy, if the Vaccinators could withstand the temptation of stopping and resuming work at their own convenience, which glass tubes would enable them to do without trouble.

11. I would strongly recommend a small increase of pay to the Vaccinators. They are a very hard-working set of men, and their present pay is hardly sufficient to keep themselves and families in common necessaries. Being always on the move, they are each obliged to keep a pony, and are seldom able to live with their families, which of course increases their little expenses.*

12. Inoculation, in my opinion, cannot be stopped, except by making it penal.

13. As I have had charge of the Sind Circle for little over four months only, a retrospect of my employment during that period must necessarily be brief, as I have not visited the whole of my districts, and am up to the present time making myself acquainted with the best method of working, and maintaining the existing efficiency of the establishment.

14. In the month of November I visited Mahomed Khan's Tanda and districts, and inspected the Vaccinator's work there, which I found satisfactory. As there were a few hundred unprotected children in the town, I set vaccination going, and the Hospital Assistant has since informed me that the work has been finished, and will be resumed in the ensuing cold season, if a sufficient number of children are available.

* Their pay has been increased.

15. October and November were spent in office work, and inspection of work in the neighbourhood of Meanee and Muttari. There is a bigoted Mussulman population in these parts, as well as in the town of Muttari, but it is almost completely protected by vaccination, to which they make no objection whatever. Part of the Halla districts were also inspected in November.

16. The month of December was employed in the Nowshera districts and visiting a few towns in the Khyrpoor State; and my 1st Assistant accompanied me in all my inspections until we arrived at Sukkurund, where I detached him to test some villages in the neighbourhood of Shadadpoor, where the amount of work appeared to be unusually large. In no case has any falsification of returns been detected; but I have been obliged to fine one Vaccinator Rupees 10 for extorting money in payment of vaccination, and withholding gratuities from the parents of lymph children.

17. Small-pox has prevailed extensively in the bordering Native States (with the exception of that of His Highness Meer Ali Murad, who employs a Vaccinator), and though it has been introduced at many points in Sind, it has remained sporadic, and attacked the unprotected only.

KATTIAWAR CIRCLE.

Superintendent.—Surgeon E. R. Butler, M.D.

Establishment.—Eight Vaccinators under Government, and thirty-four under Native Chiefs.

Population, 1,580,240. Total cost, Rs. 12,580. Average cost of each Vaccination, 4 Annas.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1867	7,829	....	....	7,550	96·4
	1868	10,523	2,694	....	9,905	94·1
Native Chiefs ..	1867	32,046	....	....	29,807	93·0
	1868	39,023	6,977	....	35,924	92·0

Before commencing my report for 1868, in justice to the gentlemen who have been acting for me, during the past two years, and in fairness to myself, and the Assistant Vaccinators of Kattiawar, I beg to say a few words, with all due respect, in reference to the 38th paragraph of the Inspector General's Report for the year 1867. The Inspector General states that the "system of vaccination is at fault." The system is the only one that can be carried on under the present state of things, for two principal reasons: The Assistant Vaccinators for the most part are kept and paid for by the wealthy Chiefs, the greater number of poorer Chiefs neither can, nor will, keep Assistant Vaccinators,

and they object to the Vaccinators of other Chiefs coming to their villages, for fear that in the event of the Chief who entertains the Vaccinators laying claim to a part or the whole of the village, the very act of the Vaccinator going there and vaccinating would help to prove the claim. This is one great reason that prevents an equal distribution of labour. The second reason is this: (but I must first go back a few years:) When I came to Kattiawar it was the custom, on a vacancy occurring, that the Superintendent of Vaccination should appoint the Vaccinator, independent of the Durbar or Chief to whom he was then sent. I found this did not work; numerous complaints came in from the Assistant Vaccinators that the village people would not supply them with food, or assist them. At last I had to report the circumstance to the Political Agent, who, in the end, had to fine the village; but all to no purpose. I then proposed that the system should be changed. Every Durbar should send their own men, and if approved of by the Superintendent of Vaccination in respect to health, knowledge of writing, reading, and keeping records, and after being properly instructed in their vaccination duties, they should be appointed; this plan answered the purpose for which it was intended, but from it arose one great evil, the Assistant Vaccinators spent most of their time about the villages near their own homes; in spite of this the new system was a great improvement on the former, for now work was done much better than before. Besides, the Chiefs immediately began to increase the number of their Vaccinators. 2nd reason—the Chiefs will not agree to allow their own Vaccinators to leave their own talookas, for if they did, the Vaccinators would meet with the same difficulty they had to contend with under the former system.

2. Two other systems have been submitted for the approval of former Political Agents, one that all the Chiefs should subscribe to a fund, to be called the "Vaccinator's Fund;" that as many Assistant Vaccinators as the Superintendent considered necessary should be employed, and that Kattiawar should be divided equally among them. The other system proposed was that the Assistant Vaccinators should all be considered Government servants, and paid by the civil authorities, the amount of their salaries to be recovered from the Chiefs. These systems under the present state of things in Kattiawar were pronounced impracticable. Vaccination in Kattiawar is not compulsory, and it was only established in 1857. The number of people operated on in 1867 was nearly 41,000, the population, according to the last census, was estimated at 1,880,240; this shows a very high percentage. Kattiawar is very thinly inhabited, and the villages, for the most part, are very small and far apart. One day I visited a village in which there were only seven children, and the day before I visited one in which there were only two; such being the state of the villages in Kattiawar, they require more men in proportion to carry on vaccination than those in the Central Circle, or in Sind,* where it is well known the population is large in the towns and villages. Another reason why vaccination is often carried on very irregularly in some of the talookas is on account of the misunderstanding between a Chief and his feudatory. A case has just

* This is incorrect; the villages in Sind are generally very small.

occurred illustrative of this. The Mangrole Chief engaged a Vaccinator; after two or three months, I received no returns from him; I wrote three months successively for his returns, and getting only evasive answers, and no returns, I sent a man to act, and ordered the Mangrole Vaccinator into Rajkote. He came, accompanied by the Mangrole Wukeel. They made a complaint that the Joonaghur Durbar had withheld the returns, because they had not been transmitted through them. I asked the Wukeel "Who paid the Vaccinator?" He, answered: "the Mangrole Durbar." Then I said, "Send one return to me, and one to the Joonaghur Durbar." They were quite satisfied, but Joonaghur was not. The head Karbaree of that State came to me, and said, "If this were done, it would be a proof that the Mangrole Chief owed Joonaghur no allegiance," and requested that the whole correspondence might be forwarded to the Political Agent for his decision, who gave it in favour of Joonaghur. In consequence of this, the Mangrole Chief refused to give the Vaccinator his salary. During the dispute no work has been carried on; Joonaghur, however, is willing to pay the Vaccinator.

3. The Inspector General also states that "the superintendence is weak." For nearly one year, during the time I was away on sick leave, there was no practical superintendence whatever; there was virtually no Superintendent of Vaccination in Kattiawar; the duties were carried on by the medical officer in charge of the regiment at Rajkote. Besides which, there is no vaccination office establishment. The senior Vaccinator writes the official correspondence, and travels about with the Superintendent, who has to find him a tent, and pay for fodder for his horse; for he certainly could not do either on rupees 20 per month, which is all the pay he gets, and he must have some means of getting about.

During the greater part of 1867 Dr. Blomfield was Acting Superintendent of Vaccination, but on account of his being ordered to take charge of the 17th Regiment N. I. and station at Rajkote, he was only able to travel eighty days; so that for nearly two years there was no practical supervision, except those eighty days.

4. The disturbed state of Kattiawar has also been a serious obstacle to vaccination being properly and efficiently carried on in some parts of the province.

5. The returns for the year 1868 show a considerable increase on the total for 1867, greater in proportion than the increase of 1867, above the total for 1866. I thought last year the number had nearly reached the maximum; the great increase is therefore more satisfactory than I had any reason to expect, as from the best computation I can make, 50,000 subjects yearly are all that can be estimated as available for vaccination. I have not made this calculation altogether from the annual birth rate, as it is so very difficult to estimate that correctly, on account of the migratory habits of the people; but have taken into consideration the large number of strangers that visit Kattiawar yearly.

6. In the commencement of my report I mentioned that the population of Kattiawar was, according to the last census, 1,880,240; this includes the inhabitants of the Guickwar's territories, which are not under my superintendence, and the population of which is estimated at upwards of 300,000. If this estimate is correct, little or no increase can be expected in the returns for 1869. I have not commenced this part of my Report till to-day (January 5th), in hopes that most of the returns for the month of December might have arrived, but as only one Government Vaccinator's report has yet come to hand, and very few from the Chiefs' Vaccinators, I cannot put it off longer, and must therefore only take eleven months of the year, and compare them with the corresponding eleven months of the year 1867.

7. The total vaccinated from January to November in 1867 was 35,860; the total for the corresponding months 1868 is 44,440; showing an increase of 8,580. There has been no tendency to increase in the latter months of the year, as in former returns, but the monthly average from January has been pretty equal, with one exception, the month of May; the large number returned for that month was the result of one of the Government Vaccinators being sent to the talooka of Wankaneer, where there had never been a resident Vaccinator before. Of course the cold weather months show a greater average than the hot and rainy, but the difference is not nearly so great as might be expected, because vaccination can be carried on all the year round in Kattiawar, the change of temperature during the different seasons not being very marked. The steady monthly average is, I think, another proof that the maximum has been reached.

8. Altogether, the number of Vaccinators employed during the year has been 42, 34 Chiefs', and 8 Government. There are nine Government Vaccinators in all; but one travels about with the Superintendent, and writes the official correspondence; another is the station Vaccinator, and his returns go in separately. Although there are 34 Chiefs' Vaccinators, on paper, the number for all practical purposes is much less; for example, the Jam of Nowanuggur entertains four Vaccinators, but generally only two are properly employed. It is not the Vaccinators' fault, but the Durbar's, who will not assist them. Then there are always two or three who are utterly incompetent for their work. The Mallia Vaccinator is an instance of this; he has become so since he was appointed. I have requested his removal; but I will mention the Vaccinators in detail, when reporting on their work. Four additional Vaccinators have been appointed during the year; two in January by the Jam of Nowanuggur, and two in March by the Nawab of Joonaghur, making thirty-four in all, four more than in 1867.

9. The Chief of Bhownuggur has for some years past made one of his Vaccinators do duty as a Native Superintendent, having increased his pay to Rs. 20 per month. I have not found that the work is carried on any better for the extra superintendence; indeed, the returns do not come in as regularly as before; but I highly approve of the appointment nevertheless, as being something for the other Vaccinators

to look forward to, especially if given, as in this case, to the most deserving. The Nawab of Joonaghur is desirous of making a similar appointment. The late Political Agent, Colonel Keatinge, recommended that there should be four Native Superintendents, each on Rs. 50 per mensem, and that the Government Vaccinators should be withdrawn. This would be a good arrangement if either of the systems as above were inaugurated; but trustworthy men could not be got for Rs. 50 a month, every thing is so dear in Kattiawar; a horse alone costs Rs. 30 a month to keep; besides, Kattiawar would lose the services of eight Government Vaccinators whom the Superintendent can order off at a moment's notice, and who are generally employed where no Vaccinator would be kept, except at the Government expense. Two or three of the Chiefs who now have the use of Government men, can well afford to keep Vaccinators; these might be withdrawn.

There has been no change amongst the Government Vaccinators; one man was fined 4 Rs. for losing lancets; otherwise no punishment has been inflicted on any of them.

10. During the year one Chief's Vaccinator died; he was very old, almost past doing his work, and should have given up work some years since, but had no pension to retire on; otherwise I would have got him invalided long ago. If Native Chiefs' Vaccinators had a pension to depend on, we could get a better class of men, who would prove much more efficient; because it would be a real punishment to be discharged; now they do not object, as the pay they get is not sufficient to keep them. Two Chiefs' Vaccinators took their own discharge on getting better employment; one was discharged for laziness; three were fined for the same reason, and for not forwarding their returns regularly.

11. The Government Vaccinators have worked well during the year. Those whose work I have inspected are most of them deserving of praise; in particular, I may mention 1st Assistant Vaccinator Runchore Munguldass (General No. 32), also Chotalal Bhoyjee, (General No. 308), whose returns show the greatest total, for the year, of any of the Vaccinators, Government's or Chiefs'. I am particularly pleased with this man, because he has been frequently transferred from one place to another, and always goes so willingly, and does his work as if he took a real interest in it. The returns of Pragjee Anundjee (General No. 277) and Rewashunker Sookaram (General No. 305), for the year each show a small total; but the former was absent from his station for three months (two on leave, and one on duty in Rajkote), and the latter was ill two months. The greater number of the Chiefs' Vaccinators have not done well during the year. I particularly allude to those whose work I inspected. The Gondul, Nowanuggur, and Jafferabad Vaccinators have all reported that they cannot do their work properly, because they get no assistance, that is to say, no horse, no sepoy or puttawalla. (I know it to be true as far as Nowanuggur is concerned.) The Jafferabad man is paid for by three Chiefs, Joonaghur, Jafferabad, and Deedan, (the Joonaghur Durbar keeps other six Vaccinators besides this man); he states that the other two Durbars give him

proper assistance, but that Jafferabad will give him no help whatever. Three of the Joonaghur Vaccinators, Hurrelal, Pranlal, and Kesoram Visvanath, deserve praise for the quantity of work they have done; but the two first-mentioned are very careless; some of the children have marks inside, and some out-side the arm; some of the cicatrices are large and well defined, others small, and yet all from the same lymph. Two other Vaccinators belonging to the Joonaghur Durbar are almost useless, viz., Mallia and Puttun. Dossoo Ramutalla, one of the Nowanuggur Vaccinators, and the Limree Chief's Vaccinator, deserve mentioning; their work, as to quantity and quality, is good. The work done by the Gondul men is small in quantity, and bad in quality; so I am inclined to think they are as much to blame as the Durbars. Toolsee Geega of Bhownuggur has vaccinated the largest number of all the Chiefs' Vaccinators; but as I have not inspected his work, I cannot report on it. On my way to join I passed through Bhownuggur, inspected the children in several villages, and found the work well done. This does not appear in my report, because I had not then taken over charge of my appointment.

I commenced my inspection tour on the 25th March, very soon after my return from sick leave. I might have commenced a few days sooner, but was detained for want of tents. As soon as I could purchase one I started, and first of all visited the talooka of Gondul, one of the Vaccinators there having witten to say that the Durbar would not give him proper assistance. I had an interview with the Karbarree, who promised to do what was necessary, but from what I have since heard, I fear very little more help has been given. In April I examined the work done in six talookas by General Nos. 103 and 112, and four Chiefs' Vaccinators, viz., Wudwan, Seala, Luktur, and Bujjana. The work done by General Nos. 103 and 112 was satisfactory, the work of the Chiefs' Vaccinators done during the commencement of 1868 and end of 1867, was very satisfactory. In May, during the fourteen days I was travelling, I examined the work done in seven talookas, three of them being the same as I visited in April, the remaining four, Wunode, Moolee, Choteyla, and Sunkulpore.

The work I inspected was all satisfactory (except that at Sunkulpore), and under the charge of some of the Vaccinators I mentioned in my last month's report; the only additional Vaccinators' work inspected was the Limree Chief's and the Rajkote Chief's; the former was not satisfactory, but he said he had been ill, and since the appointment of the second Limree Vaccinator, there had been difficulties; formerly there was only one Limree Vaccinator, now there are two. Part of this and a few days of last month I was detained at the Wudwan Government station Dispensary, operating on several cases, lithotomy, and others.

From the 20th May till 3rd October I was in Rajkote, performing my Civil duties. On the 3rd I commenced my tour. After getting some forty miles from that station, I got a letter from the Deputy Inspector General of Hospitals, requesting me to be ready at a moment's notice to return to Rajkote, and take charge of that station, Dr. Blomfield, who was performing that duty, being ordered off in charge of the 17th Regiment Native Infantry. This order was eventually reversed, and I marched with the Regiment.

During the month of Octoter I examined the work done in three talookas, Dhurrole, Nowanuggur, and Jallia, by General Nos. 186 and 307, and three Vaccinators in the employment of the Chiefs of the above mentioned talookas. The work of General No. 307 was good; that done by General No. 186 was partly good, and partly bad. Most of the work done by the Nowanuggur man was good; in three or four villages it was bad. The greater part of the Nowanuggur talooka I travelled through had been without a Vaccinator for more than a year. Dr. Blomfield had discharged the man, because he did other work as well; this man had been located at Balumba. With the greatest difficulty, after many years of persuasion on the part of three Political Agents, a new man has been appointed, but has remained at the capital (Jamnuggur) ever since. I was on my way to Jamnuggur, to try to induce the Durbar to send him to his proper place, when I was ordered into Rajkote.

During the month of November I examined the work done in nine talookas, viz.; Dhurrole, Gondul, Rajkote, Mangnee, Joonaghur, Porebunder, Bantwa, Kundorna, Dhorajee, and inspected the work of General Nos. 141, 186, 305, and 307, and the work done by the Rajkote, Gondul, Porebunder, Joonaghur and Bantwa Chiefs' Vaccinators. The work of the two Gondul Vaccinators which I examined was bad, they had vaccinated very few children, and the cicatrices were small; the work of the others was good. In the month of December I examined the work done in the talookas of Jaitpore, Mangrole, Joonaghur, and Bantwa, and inspected the children operated on by seven Vaccinators belonging to the above-mentioned Chiefs. Two of the Joonaghur Vaccinators, the Bantwa, and Jaitpore, men's work was bad. The Joonaghur Vaccinator's work was bad, from beng carelessly done; some of the children had marks inside, and some outside, the arm. Many of the children operated on by a third Joonaghur man had no marks at all. The Mangrole man's work was good in some villages, but bad in others, sheer carelessness from not propagating from good lymph, as he is a very able man. All the Durbars I have visited during my tour have treated me, individually, with the greatest kindness and courtesy, except that of Porebunder, where the Rana showed me no attention whatever; for one whole day I could not get supplies of any kind, although I wrote twice, and sent four verbal messages by different messengers. Nowanuggur and Gondul will not assist their Vaccinators as they ought to do; they think as long as they pay them, they have done their duty. I have had to make the same complaint every year about them. Some of the smaller Durbars have given trouble, but it has generally been where four or more Chiefs conjointly entertain one Vaccinator, and therefore very difficult to arrive at the truth. Joonaghur and Bhownuggur both employ a large staff of Vaccinators, and take much interest in the work. Some of the smaller Chiefs also take great interest in vaccination, but as there are upwards of 300 Chiefs, it is impossible to mention them all.

12. The percentage of success, as reported by the Vaccinators, is much too high; the highest percentage by the most careful Vaccinators whose work I have inspected might be put down at 92, and that done by some Vaccinators is as low as 75 per centum.

13. I have received lymph several times from England and from different parts of India, but it has all proved inert. I have neither heard of nor seen an outbreak of small-pox during my short tour, although I have travelled 1,110 miles, visited 132 villages, and inspected 5,051 children. I saw two children, each having been well vaccinated, as the marks bore evidence, who had suffered severely from small-pox, one five and the other three years ago; this is the first time I have even seen a case in Kattiawar of small-pox following vaccination. The first case was attacked three days after the vesicles (vaccine) made its appearance. The lymph we are at present using has one peculiarity, it very frequently produces a sore with a deep excavation, which takes months to heal; I saw one child who had been vaccinated four months ago, and one of his arms was not then healed, this lymph was introduced from England in January 1867.

14. I found two false returns, both forwarded by the same man.

15. The Political Agent and his assistants have given me great assistance.

16. Colonel Anderson, the Political Agent, has for some months past ordered the vaccination returns to be printed in the Local Weekly *Gazette*; it is not always done, for want of space, but, nevertheless, it has a good effect, as all the talookdars subscribe to the paper.

REWA KANTA CIRCLE.

Superintendent—Assistant Surgeon J. T. WELSH, M.D.

Establishment—Five Vaccinators under Government, and seven under Native Chiefs.

Population, unknown. Total cost, Rs. 3,741. Average cost of each Vaccination, 4 Annas and 1 Pie.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government. Punch Mahals ..	1867	7,967	....	....	7,373	92·5
	1868	7,507	....	460	7,094	94·4
Native Chiefs ..	1867	5,359	....	....	5,054	94·3
	1868	7,083	1,724	....	6,649	93·8

Although there has been a falling off in the number of children vaccinated in the Punch Mahals, the progress of vaccination in this Circle throughout the year has been satisfactory. The decrease occurred in the work of Jaithalal Gunputram (General No. 253), Dohud, and Mahasunker Cassiram (General No. 255) Halole, two of the best Vaccinators in the Circle, and can scarcely be complained of when the large increase recorded in the reports for the years 1866 and 1867 is taken into consideration. The total number of vaccinations in the Punch Mahals during the years 1863, 1864, and 1865

amounted to 9,534; whereas, in the years 1866, 1867, and 1868, the number amounts to 21,301. Unvaccinated children are therefore less numerous than they were; and I believe the Vaccinators worked harder during the past year than in any previous year. That they would have done more had they been entitled to travelling batta may be taken for granted.

2. The increase in the work done by the Vaccinators in the Native States is considerable this year, and is to a certain extent due to the appointment at Major Barton's request of an additional Assistant Vaccinator, to carry on work in the Sunkeira Mewas. He joined his appointment in the month of September, during which and the following months he vaccinated 371 children. The Assistant Vaccinator in Soonth and Kuddana, who during the two months he was employed in 1867 only vaccinated 99 children, has this year performed 619 vaccinations. The Assistant Vaccinator in Barriah has also been very industrious; the increase in the number of vaccinations performed by him being 539. As Barriah, Soonth, and Kuddana are about the most jungly and least civilized parts of the Circle, the success met with is the more pleasing.

3. The area of the Punch Mahals is 1,675 square miles, and the population is said to be 168,738. Taking the birth-rate at 30 per thousand, the annual addition to the population would be about 5,000, or in round numbers, some 2,000 less than the average number vaccinated yearly for the last three years.

4. The area of the Native States is 12,326 square miles. The country, with the exception of a portion of Rajpeepla, is hilly, jungly, and thinly populated.

5. In my report for the year 1867 I drew attention to the inaccuracy of the returns on the subject of infantile vaccination, and pointed out that the number of children vaccinated under one year of age was greatly exaggerated. In 1866 the percentage of operations under one year of age in the Punch Mahals was 62, in 1867 it fell to 53, and in 1868 it is only 42, which, however, is still too high. In the Native States a similar change has taken place. If the ages had been as correctly noted during former years as they were during the last, I believe there would have been a large increase in the percentage instead of an apparent decrease. While on tour I always make particular inquiries as to the age at the time of vaccination of each child inspected.

From the following statements it will be seen that there has been little or no actual decrease in the number of children vaccinated during infancy.

Punch Mahals.

Year.	Supposed annual number of births.	Vaccinations.		
		Under one year.	Above one year.	Percentage under one year.
1866	5,000	3,633	2,200	62
1867	.....	4,231	3,736	53
1868	.....	3,159	4,348	42

Native States.

Years.	Annual number of births.	Vaccinations.		
		Under one year.	Above one year.	Percentage under one year.
1866	Unknown.	2,394	2,461	49
1867	.....	2,318	3,041	43
1868	.....	2,334	4,749	32

6. The cost of each successful operation in the Punch Mahals was 4 Annas and 3 Pies, and in the Native States 4 Annas and 4 Pies. The latter sum was also about the cost of each successful case throughout the Circle.

7. The percentage of successful operations in the Punch Mahals is 94·4, and in the Native States 93·8. During my tour I took a note of the result in 3,310 of the children inspected, whose names were all called from the monthly returns, and found the percentage of success to be 88·7, which I considered very good work. Of the unsuccessful and doubtful operations 33·5 per centum were under one year of age, and 66·5 above it.

8. Of the total number of vaccinations 51·5 per centum were males, and 48·5 per centum females.

9. The pay of each of the five Government Vaccinators is Rs. 18 per month, and each has a Peon at a monthly pay of Rs. 6. In the Native States one Vaccinator draws Rs. 20, one Rs. 18-6-0, one Rs. 14-14-0, and the remaining four Rs. 18 each per month. Four of these men have permanent Peons, who draw from Rs. 3-8-0 to Rs. 5 monthly. Major Barton, Polical Agent, is endeavouring to get the pay of all the Peons increased, and he also hopes in a short time, to be able to sanction the appointment of a third Vaccinator in Rajpeepla, and of a separate Vaccinator for each of the States of Ballasinore and Loonawara, instead of one man for both, as at present. Almost every Vaccinator finds it necessary to keep a pony, to convey himself, bedding, &c., from village to village.

10. All the Vaccinators are now able to use Husband's capillary tubes, and in the course of the year 578 tubes, charged by them, were forwarded to the Local Superintendent of the Presidency Circle. The preserved lymph, however, is very uncertain in its action, which possibly may to some extent be due to its not being taken from the arm until the eighth day, when, generally speaking, it has begun to degenerate. In future some of the tubes will be charged with seventh day lymph.

11. In October and November an epidemic of small-pox took place in Ramaisra (Halole) and surrounding villages, and several children died. The disease had been conveyed from the Guicowar's territory, where it was prevalent at that time. The

Vaccinator of the district, I regret to say, had been working very carelessly, and has since been discharged from the service. In the hot weather small-pox broke out in Jaitpoor, a village in the Oodeypoor district. On my visiting the village in November, the thanadar kindly collected for inspection as many children as he could, and the result was that of thirty children with good cicatrices on their arms, none had suffered from small-pox; of five children with doubtful cicatrices three had suffered slightly; of eight unsuccessfully vaccinated, three had been slightly attacked; and of the unvaccinated, seven in number, all had suffered more or less severely from the disease. I am not aware that any other small-pox cases occurred during the year.

12. Inoculation is not practised in this Circle.

13. Within the last fourteen months I have examined the work of five of the Vaccinators twice, and that of the remaining seven, once. I was highly satisfied with the work of Jaithalal Gunputram (General No. 253), Ballajee Purbhooram (General No. 254), Mahasunker Cassiram (General No. 255), Fuckeer Mohamed Mullangbhoy, and Mahasook Kuddoojee: satisfied with the work of Pursotum Duyaram (General No. 279) Heeralal Wishoonath, Chuggon Roopchund, Wishoonath Oomyasunker, and Sobharam Sewuckram; and was only disappointed with the work of two men, viz., Gunputrao Ramchunder (General No. 262), who has been dismissed for incompetency, and Ramsunker Cassiram, dismissed for entering false names in his return.

14. The lymph has generally been good, and vaccination has been carried on throughout the whole year by all the Vaccinators.

PRESIDENCY CIRCLE.

Local Superintendent.—Sub-Assistant Surgeon ANANTA CHANDROBA.

Establishment—Six Vaccinators.

Population, 816,562. Total cost, Rs. 6,620. Average cost of each Vaccination, 9 Annas and 10 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	10,985	....	....	8,428	76·7
1868	10,757	....	228	8,149	75·7

During the year ending 31st December 1868, the total number vaccinated amounted to 10,757, being only 228 less than the number operated upon during the preceding year.

2. Of these, 5,727 were males, and 5,030 females; 7,170 Hindoos, 1,456 Mahomedans, 962 Christians, 949 Parsees, and 220 of other castes, chiefly Jews; 4,793 under and 5,964 above, one year of age.

3. Of the total operations 8,149, or a percentage of 75·75, were successful; in 1,033 they failed; and in 1,575 the result could not be ascertained.

4. The lymph has been throughout of very good quality; the success of the lymph received from Europe and the different Superintendents of Vaccination tending materially to this result. Want of lymph in sufficient quantities continues to harass us as badly as ever. I might say with truth, that this is the only obstacle in the way of the extensive spread of vaccination in Bombay worth paying any attention to. In my humble opinion, nothing short of legislative interference on the part of the authorities can meet and overcome this difficulty. The intelligent, well-to-do classes are much in our way. They one and all receive all the benefits of vaccination, as a matter of right, without, in the majority of instances, a farthing's expense; and as a return, not only do they not allow any matter to be taken from the arms of their children, but very often prevent us from taking lymph from the arms of children belonging to their servants, or their poor neighbours. How long, under the present circumstances, the department will be able to cope successfully with this difficulty, and keep vaccination going on, from day to day, all the year round, in spite of this difficulty, it would be vain of me to say. As a matter of fact, the poorer classes have long entertained the belief that the Government permits the forcible taking of lymph from a successfully vaccinated child; and it is this belief that enables us to obtain fresh lymph; once disabused of it, I need not say that one and all will absolutely refuse, and naturally so, to give any lymph; and then vaccination, as a matter of course, must come to a stand still; and it is only a question of time for the poor to follow the rich in refusing lymph. To argue with the poor people is worse than useless, they are too ignorant and illiterate to be convinced of the absolute necessity of taking lymph from one child to vaccinate another, and of the harmlessness of the operation of removing a little lymph from a vesicle. Nor are they at all to blame for this, seeing that all the most intelligent and educated persons object to a drop of lymph being taken. It is absolutely necessary to legislate for this, and it cannot be done too soon, to do away with this anomalous state of things, and make it legal to require lymph from every successfully vaccinated child.

5. During the past year 426 tubes were received from the several Superintendents of Vaccination, and in our turn, we supplied 6 different outstations with 131 tubes, 356 points, 9 pairs of glasses and 9 crusts.

6. The population of Bombay, according to the last census of 1864 is 816,562.

7. During the year Rs. 6,620 were expended, comprising the salaries and allowance of the Superintendent, the Vaccinators, and the Peons; and the contingencies of the establishment, making the cost of each Vaccination, 9 Annas and 10 Pies.

The subordinates have given every satisfaction.

VACCINATION UNDER CIVIL SURGEONS.

TANNA.

One Municipal Vaccinator, under the Civil Surgeon, Surgeon H. ATKINS.

Population, 10,581. Total cost, Rs. 213-5-6. Average cost of each Vaccination, 14 Annas and 8 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	176	....	....	103	58·5
1868	232	56	....	191	82·3

I an glad to report this year that there has been an increase in the numbers vaccinated, attributable, in a great measure, to the diligence of the new Vaccinator appointed at the beginning of the year.

Vaccination was carried on during the whole year excepting during the month of May, when it was discontinued on account of the lymph becoming so bad that it had to be obtained from Bombay. Great difficulty is found in keeping up the supply, from the dislike of the natives to allow their children to be vaccinated from, to obviate which they destroy the vesicles about the 6th day.

Small-pox was prevalent from January to June, and one case came into hospital which was unprotected.

BANDORA.

Operations performed by Sub-Asistant Surgeon A. DESOUZA, in charge Dispensary.

Population, 7,746. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	93	.....	.....	64	68·8
1868	336	243	.....	286	85·1

During the year ending 31st December 1868 the total number of children vaccinated amounted to 336, which exceeds the number vaccinated in any previous year since 1856. Vaccination was introduced into the Catholic Orphanage here in March last, and a large number of children belonging to this institution were vaccinated, and it was subsequently kept up both at the Dispensary and the Orphanage, on every succeeding Friday. The supply of lymph was obtained solely from the latter institution. It is owing to this circumstance that the increased number of operations appears in this year's return. The success was 85·1 per centum. Small-pox was not seen here, except in a sporadic form in March last.

ALIBAUGH.

Operations performed by GUNGAJEE RAMJEE (General No. 330), Hospital Assistant, in Medical charge Dispensary.

Population—4704. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	200	....	....	180	90·0
1868	335	135	....	263	78·5

During the year under report 335 children were vaccinated, being an increase of 135, as compared with the preceding year.

There were 200 males, 135 females; 16 Christians, 274 Hindoos, 16 Mussulmans, and 29 other castes; 61 children were under one year of age, and 274 above one year; 263 were successful, 56 unsuccessful, and 16 doubtful.

Fresh lymph was used, and the vesicles were mostly as large as gram or pea. Vaccination has been carried on every Monday at 10 A.M. since I received charge, and every exertion is made to induce parents to bring children for vaccination.

I applied for a Peon to the Mamlutdar of Alibaugh, to collect the children in the town of Alibaugh, and bring them to the Dispensary every Monday for vaccination, and my request has been complied with; this assistance has enabled me to show the above favourable result. Almost all the children in the town of Alibaugh have been

vaccinated, with the exception of infants within four months old, who were not allowed to be vaccinated by their parents, and indeed great difficulty has been experienced in performing this operation amongst Hindoos, particulary the Kolees (fishermen).

The largest numbers were vaccinated in the months of May, June, July, and August, and the least in January, February, April and November.

Two Vaccinators were sent from Bombay in the month of May to vaccinate the children in Alibaugh districts, and it would appear that they have vaccinated a large number in the adjacent villages.

Small-pox prevailed amongst the children of Kolees in Vursolee, about a mile and a half distant from this town, and slightly in Alibaugh among the Marathas at the end of the month of December. One Mussulman boy about 14 years old was admitted into hospital with small-pox in the month of May, and recovered.

BHEWNDY.

Operations performed by Sub-Assistant Surgeon SHAMRAO JAGHANATH, L.M., in charge Charitable Dispensary.

Population—10,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	78	....	....	....	48·7
1868	87	9	....	56	64·4

During the year under report in all 87 children were vaccinated in connection with the Bhewndy Charitable Dispensary, of which 57 were male, and 30 female; of these 31 were Hindoos, 29 Mussulmans, and 27 of other castes; 21 were under one year of age, and 66 above one year. In fifty-six only the operation was successful, in 11 doubtful, and in the rest unsuccessful.

The population of Bhewndy is about 10,000, but most of the children have been vaccinated before the establishment of the Dispensary. Of the Hindoo population of Bhewndy the Brahmins, Purbhas, and Vanees are not at all against vaccination, but the Sutars, Lohars, and Hamals are very much against it, and cannot be prevailed upon to get their children vaccinated. The Mahomedans, with few exceptions, are not against it.

The cost of vaccination for the year under report has been nothing.

RUTNAGHERRY.

One Government Vaccinator, under the Civil Surgeon, Surgeon C. JOYNT, M.D.

Population, 67,488. Total cost, Rs. 134-8-6. Average cost of each Vaccination, 1 Anna and 5 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,302	....	....	1,008	77·4
1868	1,342	130	....	1,080	75·4

The vaccinations performed during the past year exceeded those of the preceding year by 130, and those of the year 1866 by 1,159, and this increase appears, every thing considered, satisfactory.

2. Of the total number vaccinated, 596 were children under one year old, showing, both absolutely and relatively, a greater number of infants operated on than in any preceding year.

3. The station Vaccinator extended his operations during the year to sixteen villages, besides Rutnagherry, and extending in a radius of 6 miles from the station. In these villages 1,190 children of various ages were vaccinated, and 242 in Rutnagherry. In the different villages the vaccinations varied from 153 in Pomendee to 5 in Sewry, the difference depending doubtless on the population of the villages.

4. Since my arrival at this station, I have regularly inspected the work of the Vaccinator in the town of Rutnagherry, as well as in the village at the Fort about a mile from the town. In many cases I found the lymph to be very indifferent, but by a careful selection of good vesicles for the propagation of vaccine matter, an improvement in the quality of the lymph has been effected.

5. As I am unable to visit the different villages in which the Vaccinator performs his operations personally, I make him bring me every month a certificate from the village Fouzdar in verification of his return.

6. The operations of the Vaccinator are attended with some difficulty up to November, owing to the want of a Peon. A Peon was engaged on the 15th November 1868, and I trust that the amount of work done in 1869 will show that this assistance has not been unnecessary.

VINGORLA.

Operations performed by the Apprentice, under Mr. Apothecary HANSON'S supervision.

Population, 10,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	151	.....	.....	137	90·7
1868	382	231	.....	358	93·7

The number of the popuation among whom vaccination is carried on, is estimated at about 10,000. The total number vaccinated during the year was 382, being an increase of 231 over the preceding year; 229 were male, and 153 female children; 65 were under one year, and 317 above that age. The successful vaccinations have been 358, or 93·7 per centum on the total number vaccinated. The lymp was good and the vesicles were in general characteristic. In some children, the vesicles were broken before the eighth day, and the lymph dried up into irregular crusts. Such cases were entered in the register as doubtful, and were afterwards either re-vaccinated, or allowed to wait for another time. In April, vaccination could not be kept going, owing to the loss of the lymph, which occurred by the removal of three children with the vaccine vesicles, to another part of the district. In May lymph was obtained on glasses from the Vaccinator at Malwan, but it did not take; it was subsequently taken from the arm of a child which had been brought from Sawunt Warree, and proved effective. Vaccination has since then been carried on regularly. There being no Vaccinator or Peon attached to this station, the only expense incurred on account of vaccination during the year is Rs. 1-12, being the value of two lancets and one lancet case, which were used in vaccinating the children; this sum divided among 358 successful vaccinations, gives one pie nearly as the cost of each vaccination. Small-pox prevailed to a small extent in the town of Vingorla during the months of April and May last. The disease was confined chiefly to the Chumbars or Moochees, whose houses are situated in a separate part of the town. The cases, with one exception, were all of the discrete kind. All recovered; 34 persons were attacked, of whom 17 were adults, and 17 children between the ages of three and ten years. It was stated, that, of those attacked 23 persons had previously been vaccinated, but on inspecting a few of their arms, no vaccine marks were visible.

KARWAR.

One Government Vaccinator under the Civil Surgeon, Assist. Surgeon J. DAVIES.

Population, 5,000. Total cost, Rs. 135. Average cost of each Vaccination, 6 Annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	308	....	....	277	89·9
1868	362	54	....	306	84·5

The total number vaccinated is 54 more than in the previous year. Out of the total of 362, fifty-six only were vaccinated under one year of age, and 306 above that age. All classes here have still a great aversion to vaccination within the first year, above that age they acquiesce in the operation, but show no anxiety to have it done. Probably the absence of small-pox for some years back at Karwar and the adjacent villages renders them indifferent to vaccination. The quality of the lymph has been good and the vesicles are generally very well developed.

SURAT.

One Government Vaccinator, under the Civil Surgeon, Surgeon H. J. GANE, (Acting).

Population, 85,000. Total cost, Rs. 172-1-0. Average cost of each Vaccination, 11½ Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,631	.....	.....	1,395	85·5
1868	2,840	1,209	.....	2,370	83·4

2,840 children have been vaccinated during the year by the Native Vaccinator under my supervision, being an increase of 1,209, as compared with the previous year.

2,370 cases were successful, 112 were unsuccessful, and 358 were doubtful. The percentage of successful cases being 83·4. 1,566 were males, and 1,274 were females. 1,241 were under one year and 1,599 were above one year. 10 were Christians, 1,882 were Hindoos, 759 were Mussulmans, 105 were Parsees, and 84 were other castes. A good supply of lymph has been kept up, and the vesicles have been large and defined. The total cost of vaccination was Rs. 172-1-0. The average cost of each vaccination was 11½ Pies. A large portion of Natives have a great objection to vaccination, but during the months of February, March, and April, when small-pox prevailed in the city, they readily brought their children to be vaccinated. The number of deaths in the city from small-pox was 367, of these 354 were children, and 13 adults.

BROACH.

One Government Vaccinator, under the Civil Surgeon, Surgeon J. Glen. Population, 30,755. Total cost, Rs. 160. Average cost of each Vaccination, 2 Annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,226	....	....	1,094	89·2
1868	1,265	40.	....	1,018	80·4

Since receiving charge of the Broach Civil Hospital, three months ago, vaccination has been carried on steadily and efficiently. The numbers vaccinated have been somewhat greater than in the previous year, but the number of the successful cases is considerably less.

The number of inhabitants in the city amounts to 30,755. The total cost of vaccination in 1868 amounted to Rs. 160, and the average cost of each vaccination 2 Annas.

POONA.

One Government Vaccinator under the Civil Surgeon, Major LORD, M.D.

Population, 30,000. Total cost, Rs. 168. Average cost of each Vaccination, 1 Anna and 7 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	2,022	....	....	1,736	85·8
1868	1,641	....	381	1,387	84·5

There has been a decrease of 381 in the total number of persons vaccinated, which the tabular report shows to be divided over the different heads borne on the annual return, with the exception of Christian children, and those over one year of age, in both of which classes there has been an increase. The proportion of successful cases is 1·3 per cent. lower than in the preceding year. The Vaccinator formerly received assistance in collecting children for vaccination either from a Police Peon, or one supplied by the Municipality, but since 1867, all such aid has been withdrawn, and to this he attributes the decrease in the number of his operations. In paragraph 3 of Resolution of Government in the General Department, No. 895, dated the 13th May 1868, regarding revised subordinate Hospital Establishments, 3 Peons are stated to have been recommended by Mr. Peile for Hospitals which have a Vaccinator attached to them, and two for those without a Vaccinator, which Government considers to be a reasonable allotment; so, as but two Peons are at present allowed on the establishment of the Sassoon Hospital, a third, chiefly with the view of giving assistance to the Vaccinator, would probably be sanctioned if the matter were departmentally represented. The lymph has been kept in good condition by the Vaccinator, and his operations on European and other fair-skinned children have been very successful.

There was a good deal of small-pox in and about Poona in the earlier months of the past year, which led to a correspondence originating with the Cantonment authorities as to the necessity for a small-pox hospital, which, so far as I am aware, was not attended with any decided result towards establishing so desirable an institution. This year we have had a few cases of the disease; in fact, seldom a cold season passes at Poona without its making its appearance in the City or Cantonment. It is thus especially desirable that vaccination should be encouraged, and I therefore hope the moderate aid of a Peon to the Vaccinator as above suggested, will not be denied.

It may add slightly to expense, but the average rate at present is not high, being for the year under report between 1 Anna and 7 Pies, and 1 Anna 8 Pies for each operation performed, or not quite 2½*d*. English money.

The total cost of vaccination for the year was Rupees 168. There is but one Vaccinator under the Civil Surgeon, on a salary of 14 Rupees per mensem. There are no data from which to estimate the population in the Vaccinator's charge, which consists of—1*st*, residents within civil limits, of whom no census has been taken; 2*nd*, applicants at the hospital, who are vaccinated irrespective of place of residence; 3*rd*, families of persons in civil employ many of whom reside within the Cantonment; and 4*th*, a portion, equal to about the third, of the inhabitants of the city of Poona, the population of which is estimated at 82,000.

If therefore we take a third of the latter sum, and add to it even the most moderate estimate of the population of the civil limits, including railway station and buildings around, we may say that the Civil Vaccinator's charge at Poona comprises over 30,000 individuals.

DAPOOLEE.

Operations performed by Sub-Assistant Surgeon M. Hearn, in charge Civil Hospital.

Population, 6,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	123	.....	.....	123	100·
1868	252	129	.....	228	90·5

There has been an increase of 129 children vaccinated above the number returned in 1867; 127 were males, and 125 females; 2 were Christians, 236 Hindoos, and 14 Mussulmans; 29 were under 1 one year, and 223 above that age.

The Hindoos as usual preponderate.

The lymph was very good, and the cases that have proved unsuccessful and doubtful are, I am of opinion, owing to some peculiarity of constitution, and not in the least to the character of the lymph; for example, in the two European children that were vaccinated, I never saw better vesicles, and, generally speaking, they were very good; the pustules are not so large, and the areolæ are not so well-defined in the Hindoo children as they are in the flesh-eating Christians and Mussulmans.

The most favourable period for vaccination is from November to April.

I vaccinate the children in the villages immediately around Dapoolee, and all children that may come in from the districts to be vaccinated.

No cases of small-pox occurred in the camp at Dapoolee during the period embraced in this Report.

The number of the population among whom vaccination is carried on is about 5,949.

There is no separate establishment for vaccination at Dapoolee.

AHMEDNUGGUR.

Two Vaccinators, one Government, and one Municipal, under the Civil Surgeon, Assistant Surgeon H. T. DANN, B.A.

Population, 39,000. Total cost, Rs. 242-8-0. Average cost of each Vaccination, 3 Annas 7 Pies.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
			Increase.	Decrease.		
Government	1867	993	....	....	908	91·4
	1868	1,010	17	....	914	90·5
Municipal	1867	735	....	....	669	91·0
	1868	808	73	....	713	88·2

I have much pleasure in being able again to report an increase of ninety in the number of vaccinations during the past year. The percentage of successful, however, is slightly less. The Municipality's Vaccinator has effected an increased number of vaccinations this year, as compared with the year 1867, viz. 808, as compared with 735 during the year preceding. The number of operations returned by the Civil Surgeon's Vaccinator is 903 in the city, being an increase of 112 over last year's return, and, although there has been a slight decrease in the number of vaccinations effected within cantonment, yet the operations exceed by seventeen the return for the year 1867.

The annual return of persons vaccinated at the Civil Hospital Ahmednuggur, shows a slight increase over last year, viz. 130 to 126 of the year preceding. No cases of small-pox were admitted into the Civil Hospital during the year.

There were only 25 persons vaccinated in the Police Hospital during the year, as contrasted with 63 of the year preceding, but not a single case of small-pox occurred

in the Police force during the year 1868. Of six recruits who joined the Police corps during the year, three had had small-pox, and three had been vaccinated before they were enlisted.

The largest percentage of unsuccessful cases was in the month of January 1868, and doubtful cases in the month of October 1868. The Vaccinators were both of them very attentive to their duties.

SATTARA.

One Government Vaccinator, under the Civil Surgeon, Assistant Surgeon H. V. CARTER, M.D.

Population 24,257. Total cost, Rs. 300. Average cost of each Vaccination, 1 Anna and 6 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,344	...	...	1,270	94·4
1868	3,177	1,833	...	2,825	88·9

The above return shows a total vaccinated of 3,177, being an increase on the previous year of 1833, and the highest number for any one of the last five years. That small-pox was prevalent in the districts around this city during the period under report may be one efficient reason why vaccination was sought after by the people more freely then than during the previous two years, when the disease did not generally appear.

Of the total vaccinated 1,147 subjects were under one year of age. The month of April shows the highest monthly number, viz. 909 ; and it may readily be understood that the majority of the children operated on came from the districts, and not from the town or station to which the Vaccinator's operations are supposed to be chiefly confined. In fact, it may be inferred that the children in the city of Sattara are already largely protected by vaccination, from the circumstance that so few fatal cases have occurred in the city during the past year, notwithstanding free communication with infected districts. It is difficult to account for the smaller percentage of success during the past year than previously, since the lymph employed has always, when it succeeded, caused good vesicles, and shows no signs of deterioration of quality.

SHOLAPOOR.

One Government Vaccinator, under the Civil Surgeon, Assistant Surgeon G. Y. HUNTER.

Population 60,000. Total cost, Rs. 187-14-8. Average cost of each Vaccination, 4 Annas and 6 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,655	....	....	1,229	74·3
1868	671	....	984	585	87·2

During the past year the number of persons vaccinated was 671, of whom 379 were males, and 292 were females; 291 were children under one year of age, and 380 were above that age. 585 operations were successful, 43 doubtful, and 43 unsuccessful. There is a very great falling off in the number of operations, as compared with the previous year, when 1,229 children were vaccinated. This is probably owing to the fact, so far as I can gather from the Hospital records, that a new Vaccinator was employed during the year 1868 in place of the late Vaccinator, Ramchunder Shreeput, who was sentenced and discharged for rioting during the year 1867. This new Vaccinator was recommended and sent by the Superintendent of Vaccination, Central Circle, from Ahmednuggur; he was quite a stranger to this station, and besides for about the period of five months he had no Peon or Sepoy to assist him in procuring children for the operation. There is another reason to account for the falling off in the number of operations, viz. that another Vaccinator was employed at the Charitable Dispensary in Sholapoor, by the Municipality, since the year 1867, for the purpose of vaccinating in the city.

The successful operations amount to 87·5 per cent. There is, I am happy to be able to state, a very decided increase this year in the percentage of success, as compared with the previous one, when the percentage of success was only 74·4.

The quality of the lymph was very favourably reported on by my predecessors, during the year, and I can testify to the goodness of its quality now, from personal observation, on three distinct occasions since my arrival in the month of December last.

I beg to state that, as I have only recently joined this appointment, I am unable to speak very positively of the system of vaccination established at this station; but I have no doubt, with careful supervision, the good work will progress, and Natives will be persuaded to give their children the benefits of vaccination.

DHOOLIA.

One Government Vaccinator, under the Civil Surgeon, Assistant Surgeon G. BAINBRIDGE.

Population, 13,277. Total cost, Rs. 216-4-9. Average cost of each Vaccination 4 Annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	808	....	....	710	87·9
1868	878	70	....	796	90·7

It will be seen that the percentage of successful cases and the total number of cases vaccinated have somewhat increased during the past year; and the total number of vaccinations is in excess of the average number for the last five years. Considerable difficulty has been experienced in inducing the people to send their children for vaccination to the station where it is performed, not owing, I think, to any strong prejudice against the operation, but in most cases to ignorance, or indifference. I regret to say that the village authorities have been somewhat irregular in the performance of their duties of assisting the Vaccinator in collecting the children for vaccination, and have frequently required reminding of this work, which it is incumbent on them to aid. The difficulty of gathering together subjects for vaccination has however been in a great measure obviated since Government have sanctioned three Peons on the establishment of the Civil Hospital; one of these was appointed to assist the Vaccinator, and he being under my direct authority, is of more service than the Police Peons and other village servants, who have other duties to perform, and are consequently not always available. The duties of the Vaccinator being extremely light, and the area of his work very small, confined as it is to the town of Dhoolia, I have directed that he shall personally visit the houses of those people who are unwilling to bring their children to the vaccine station, so that he may use persuasion to induce them to submit to the operation. The Municipality of Dhoolia have had brought before their notice the question of entertaining a Vaccinator in their service, in lieu of the one at present who belongs to the Vaccination Department. The subject was discussed at a general meeting of the Commissioners, and they gave a unanimous decision against the proposal, on the ground that the expenses incurred in carrying out public vaccination were, they thought, properly debitable to Imperial funds as at present. I think that probably the influence of the Municipality might be productive of greater facility and success in the prosecution of vaccination; but seeing that a considerable number of the persons vaccinated are not inhabitants of the town, but only temporary residents, prisoners, or camp followers, and that the employment of Vaccinators out of local or Municipal funds, is not yet uniformly adopted or

proposed, there does not appear to me to be any strong argument in favour of the expenses of vaccination in this station being borne by the Municipality.

Two cases of variola were treated in the Civil Hospital during the year, one of them being a bad confluent case; both recovered. Two other cases were attended in the town, one of which recovered, and the other died, having been visited for the first time on the eighth day of the disease, which proved fatal on the tenth.

Lymph was sent to several Vaccinators in the districts, and especially to Malligaum, where, for some reason, it was most frequently reported to have proved inert, though that which was sent was of uniformly good quality. Vaccination has been performed twice a week throughout the year, and the supply of lymph has been constant and productive of perfectly characteristic vesicles.

The conduct of the Vaccinator during the past year has been good, and he has given me satisfaction in the performance of his duties.

NASSICK.

One Government Vaccinator, under the Civil Surgeon, Honorary Sub-Assistant Surgeon A. Summers.

Population, 21,855. Total cost, Rs. 204. Average cost of each Vaccination, 3 Annas 2 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,079	....	....	1,029	95·3
1868	1,013	....	66	956	94·3

During the year just expired there have been some changes in the establishment. A good old Vaccinator belonging to the Nassick Civil Hospital died on the 28th of June, and on the 29th June Ballaje was appointed to fill his place. The first Vaccinator was well up to his work, and expert in its operations; his successor is wanting in the same zealous energy, and the result of last year's operations shows a decrease of 66 in the numbers operated upon, compared with the preceding year.

Another feature in the changes for the past year was the employment of a Native Vaccinator at Rs. 12 per mensem by the town Municipality, for part of October and months of November and December; the number operated upon by him is not shown in the Nassick Civil Hospital Vaccination Return, but it is noted here separately.

Vaccination performed by the Municipal Vaccinator, total, 75; successful, 44; failed, 20; doubtful, 11.

I am happy to state Nassick has enjoyed an immunity from small-pox, measles, &c.

BELGAUM.

One Government Vaccinator, under the Civil Surgeon, Surgeon R. C. THORP, M.D. (Acting).

Population, 27,242. Total cost, Rs 120. Average cost of each Vaccination, 3 Annas and 3 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	803	....	....	759	94·0
1868	578	....	225	566	97·9

During the year 1868 there has been a large decrease; this is in a great measure to be attributed to the caste prejudices of the Lingayets and Marathas, also to the fact that two Vaccinators are working in the same district, in opposition, as it were, to each other. If the pay of one man were increased to Rupees (15) fifteen, and this sum given partly by Government, and partly by the Municipality, it would make the situation worth keeping; so the Vaccinator would be careful to give true reports and that there should be no shortcomings. In the Staff bazaar and lines 96 have been vaccinated in a population of 6,078, making a total of vaccinations 674, at a cost of 120 Rupees, being nearly at the rate of 2 Annas 10¼ Pies for each person vaccinated.

DHARWAR.

One Government Vaccinator, under the Civil Surgeon, Surgeon M. M. MACKENZIE.

Population, 30,000. Total cost, Rs. 116-12-5. Average cost of each Vaccination, 3 Annas 1 Pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	635	....	....	548	86·3
1868	661	26	....	536	81·1

The Vaccination Return for the year 1868 shows an increase of 26 over that of the preceding year, being 661, of which 536 were successful, giving a little over 81 per cent. successful, or 5 per. cent less than that for the preceding year. The decrease may be accounted for by the disappearance of many of the vaccinated children, removed intentionally or otherwise by their parents, and to some extent, doubtless, the failing health and strength of the lately deceased Vaccinator prevented his seeing many of the cases personally after the operation. I have always been able to keep an ample stock of good healthy lymph; the vesicles being round, full, and of ample size. The authorities have on all occasions given the Vaccinator every aid in his zealous endeavours; and I much regret his death, which occurred on the 21st December 1868. He had always proved himself a good, steady, quiet, and zealous servant of Government, and I had always every cause to be satisfied with him.

HOOBLEE.

One Municipal Vaccinator under Sub-Assistant Surgeon WAMON WASSADEV, Medical charge of Dispensary.

Population, 40,000. Total cost, Rs. 159-10-6. Average cost of each Vaccination, 1 Anna and 7 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,375	.....	.....	1,287	93·6
1868	1,597	222	.....	1,519	95·1

The total number of persons vaccinated during the last year is 1,597, being an increase of 222 over the number vaccinated during the year 1867.

The increase is, in my opinion, greatly due to the efficient manner in which the Assistant Vaccinator performed his duties. Of the total number vaccinated 854 were males, 743 females, Mussulmans 236, Hindoos 1,375, and Christians 4. Of these 1,519 were successful, 15 doubtful, and the remaining 63 unsuccessful.

The percentage of success is in excess of that of the previous year by 1·5.

The condition of the lymph and vesicles has been good throughout the year.

A few isolated cases of small-pox occurred during the month of January.

The increase in the number of vaccinations shows that the good effects of vaccination are being better appreciated by the inhabitants.

KOLAPOOR.

One Native State Vaccinator, under Mr. Apothecary ANDING, in Medical charge Civil duties.

Population, 110,000. Total cost, Rs. 90. Average cost of each Vaccination, 1 Anna 6 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,751	....	....	1,740	99·3
1868	2,028	277	....	2,013	99·2

During the past year the number of vaccinations performed by the station Vaccinator in the city of Kolapoor, with the whole of the villages of the Petta Kurveer, amounts to 2,028, which is more than that of the year preceding by 277 cases. Of the total number vaccinated in the year under report, 1,068 were males, and 960 females, 395 were children under one year, and the remaining 2,013 were above that age. The percentage of successful cases has been 99·2, which is about the same as last year. During the year a few isolated cases of small-pox occurred in ten villages of the Kurveer Petta, namely, Boura, Kundulgaum, Balinga, Vulewda, Wassee, Singnapoor, Saverda, Beed, Padley and Kandgaum, but the disease was not reported to have shown itself in an epidemic form.

The lymph in use has been of good quality, and has not failed, and was pronounced to be good by Dr. Dick, of H. M.'s 17th Regiment N. I., to whom lymph was supplied, as usual, for the camp, and also to some of the Vaccinators serving under the Superintendent of Vaccination Southern Circle, when required. The station Vaccinator was diligent and attentive to his duties, and his conduct on the whole has been satisfactory.

The annual Vaccination Return at the Dispensary is also annexed, from which it will be seen that 328 cases, out of 334 vaccinated during the year, have proved successful, thus leaving but six unsuccessful and doubtful. The number vaccinated is greater than that exhibited in the previous year's return by 88 cases. The vesicles have always presented the normal character of the vaccine pock.

The increase in the total number vaccinated during the year is partly to be attributed to the confidence the people are now acquiring in the benefits of vaccination, and partly to the circumstance of small-pox having prevailed to a greater extent this year than the last, as there were then only four villages affected, while in the year under report the disease prevailed in two, the names of which are given.

AHMEDABAD.

Two Municipal Vaccinators, under the Acting Civil Surgeon, Surgeon Major J. PIRIE, M.D.

Population, 100,000. Total cost, Rs. 456-12-0. Average cost of each Vaccination, 1 Anna and 7 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	4,273	.....	.....	4,153	97·2
1868	4,604	331	.....	4,489	97·5

The returns of vaccination for the year now under report exhibit an increase of 331 operations over the previous year, and the total number of vaccinations was 4,604.

The work done by the two Vaccinators was 2,146 and 2,458 respectively, which gives a difference of 312 in the number of operations performed by each. Though the increase is due to the labours of the Mussulman Vaccinator, I do not attribute any want of zeal to the Hindoo lad, but to the greater apathy of the Hindoo community, particularly of the Banian section of it, to the advantages of the protection. There is no actual opposition made to vaccination by the people, but the difficulty the Vaccinators have to contend against is the fact that the parents frequently conceal the children after being vaccinated, and will not allow the matured vesicles to be opened, for the propagation of the lymph, in the belief, that by taking the fresh lymph from the child's arm, the successful result is impaired. The Vaccinators state that the people are not unwilling to submit their children for protection, but object to the lymph of one child being taken to vaccinate several, whilst others are not used at all. In respect of sex, 2,357 were males, and 2,247 females, showing an increase of 122 cases in males, and 209 in females, indicative of an increasing regard for the protection of female offspring. In the preceding year a considerable increase in this respect was also recorded. In the age the excess was 247 under one year, and 84 above one year. In caste the rise was 128 in Hindoos, and 221 in Mussulmans; the decrease was 11 in Christians, and 7 in Parsees. In result 4,489 were successful, 78 failed, and 37 were doubtful. The percentage of success was 97·5, showing a slight difference from the previous year.

The quality of the lymph has been good and active throughout the year, and the resulting vesicles large, well-formed, and distinctive, leaving well marked cicatrices. During the monsoon the vesicles did not develope so well, were smaller, and the lymph not so clear, but no deterioration was reported, and supplies have regularly been fur-

nished to cantonment and distant stations. After the heavy rains in August last fever prevailed to a large extent, with secondary chest affections, and infantile diarrhœa, and the people were naturally unwilling to expose their children. From the sickness and distress consequent on the excessive rains, a large falling off in operations was apprehended, but the returns compare very favourably with the work done in the preceding year. March, April, May, and June were the months in which the greatest number of vaccinations was effected, and the highest number for one month was 512 in April.

In March 4 cases of small-pox occurred, two in children, and two in adults, and all recovered. The disease was imported by these persons arriving from Marwar and Hindoostan, but as measures were speedily taken to arrest the spread of the disease, no more cases appeared during the year. From what I have observed, I partly agree with the Vaccinators in believing that, with the assistance of Police Peons, the people would be still more induced to bring forward their children for vaccination, than is at present done by the help of the Municipal Peons, whose presence appears to produce much less influence than a Government servant. The Vaccinators are instructed to avoid all compulsory action, and employ persuasion as much as possible.

By the latest census the population within the walls was estimated to be about a lakh. The total cost of the establishment for the year was Rs. 456-12-0, including contingencies, as charge of lancets, cases, tubes, bottles, and stationery. The rate of each vaccination was 1 Anna and 7 Pies. In the previous year the cost was Rs. 457, and the rate was 1 Anna and 1½ Pies. For 1866 the expenditure was Rs. 460, and for each operation 1 Anna and 3½ Pies, and the total number vaccinated was 5,689.

KAIRA.

One Government Vaccinator, under the Civil Surgeon, Assistant Surgeon H. Cook, M.D.

Population, 13,000. Total cost, Rs. 330. Average cost of each Vaccination, 2 Annas and 7 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	867	.....	.....	764	81·1
1868	796	.....	71	638	80·1

The total number of cases vaccinated during the past year was 796, showing a decrease on the number vaccinated during the previous year of 71, the causes of which

will be alluded to presently; of these cases 695 were among children under one year, the ages of 101 being above that amount, a greater number of the latter class being prisoners who were vaccinated on admission into Jail, as a precautionary measure, when they did not present unequivocal signs of having had small-pox, or of having been vaccinated previously. With regard to sex, 492 were males, 304 females. 682 were Hindoos, 67 Mussulmans, 2 Christians, and 40 other castes. No Parsees were vaccinated, but there are very few in Kaira, and they seldom allow the operation to be performed. With reference to the result of the operations, it will be seen from the return, that 84 have been unsuccessful, and 74 doubtful, out of the total number. This is an unusually large number, but the great majority of the prisoners vaccinated were operated on, either without, or at least very doubtful, results, as might have been expected. The parents of the children operated on are very careless about preserving the vesicles intact until mature, and consequently the result is not as good as it would otherwise be.

The work of the Vaccinator is principally confined to the town, but when there is a scarcity of available subjects there, he vaccinates in the surrounding villages; did he not do so, he would lose his lymph sometimes, from the difficulty of getting a continuous succession of suitable subjects. He also vaccinates, when he has an opportunity, strangers and their children, who come to the town on business, or reside here temporarily. He is allowed a Peon by the Municipality to assist him in the search for and collection of children requiring the operation; the same Peon now always accompanying him when at his work.

The quality of the lymph and vesicles has been good throughout the year, and the Vaccinator has performed his work satisfactorily and diligently. In the months of August and September there was a failure in the supply of lymph, owing to floods cutting him off from children whom he had vaccinated, and on whom he was dependent for the continuance of the supply, and considerable difficulty was experienced in getting a fair supply in hand, owing to lymph sent in tubes having failed, and the difficulty of getting a child brought with good lymph from the district Vaccinator at that season. These difficulties were at last overcome, and there is now a full and continuous supply. From the above causes the numbers vaccinated during August and September were 44 and 17 respectively, a diminution which has told in the annual return. Vaccination inspections are held monthly, and the character of the lymph and the vaccination work generally thereby ascertained. The inhabitants of the town and neighbourhood seem to appreciate and understand the value of the operation, and as a rule do not object to have it performed on themselves or their children, though they are exceedingly slothful and careless about it, and require to be sought out for the purpose. The Parsees seem to have the greatest objection to the operation. The beneficial effects of the operation are well marked in preventing epidemic attacks of small-pox, and though sporadic cases are of constant occurrence, the great majority of the juvenile population are protected by vaccination, while the seniors have been

protected by the disease, but, it must be confessed, at a cost of a great deal of blindness and disfigurement; so there does not appear much danger of a serious epidemic from this cause. So far as I am aware, inoculation is not practised here; I never heard of a case, though I have made frequent inquiries on the subject.

The population among whom the vaccination work was performed numbers from 12,000 to 13,000, and the cost of each vaccination has been a little over 2 Annas and 7 Pies; the pay drawn by the Vaccinator during the year was Rupees 130.

RAJKOTE.

One Government Vaccinator, under the Civil Surgeon, Surgeon A. M. Blomfield, (Acting).

Population, 2,500 (Camp). Total cost, Rs. 120. Average cost of each Vaccination, 6 Annas and 2 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	999	.....		940	94·0
1868	308	.....	691	259	86·3

The decrease in the number vaccinated is owing to the operations being confined to the town and station of Rajkote, and its immediate neighbourhood. The few children that I have seen have been properly done; a large number of those residing in the Sudder bazaar are unvaccinated.

VEERUMGAUM.

Operations performed by Dowlut Sing, 1st Class Hospital Assistant, in Medical charge of Dispensary.

Population No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	....	....	....	....	....
1868	122	122	....	106	86·8

I arrived here on the evening of 24th January to join my appointment, and commenced vaccination next day. Lymph was brought from Ahmedabad, and was used successfully till August, when I got some fresh lymph from the Municipal Vaccinator working here, who has been Vaccinator for nearly three years, and who vaccinates three times a week. The total number vaccinated by me in the Dispensary during the year 1868 was 122, of these 71 were male, and 51 female children; 61 under one year, and 61 above that age. The successful cases have been 106, or 86·8 per cent. on the total number vaccinated.

The lymph and vesicles were good. No case of small-pox came under my observation.

DHURRUMGAUM.

Operations performed by Mr. Apothecary W. WAITE, Khandeish Bheel Corps.

Population No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	....	....	....	....	....
1868	108	108	....	92	85·4

Vaccination has been carried on as usual, and with much better success, than during the previous year; 108 children were vaccinated. Of these 99 were of the Bheels, and 9 of followers. 92 cases proved successful, and 10 unsuccessful; the latter being re-vaccinated until the operation succeeded. The number of unsuccessful cases to successful appears great; being 14·6 per cent., and yet it is not so great as in the preceding year. It has been frequently observed that the vaccination of one batch of children will prove successful in almost every instance, while nearly half the cases in another batch operated upon at a different time, will fail without any visible cause, the same person having vaccinated both times, and the same care having been taken. There are, no doubt, some states of the atmosphere more favourable to vaccination than others. Should small-pox be prevalent in the village or in the districts (as was the case last year) but few failures appear in the children vaccinated, and the pocks are perfectly satisfactory; while if small-pox is not heard of, vaccination is not generally so successful. That state of the atmosphere then most favourable to the prevalence of variola, seems equally propitious to the operations of the Vaccinators.

The lymph supplied by the Native Vaccinator has generally been good and healthy.

Three cases of variola appeared during the month of May. All bore distinct marks of previous vaccination. The cases were mild, and recovered. They were children of one family; their father is Subedar Major of the Khandeish Bheel Corps. During this month small-pox was rather prevalent at Dhurrumgaum and in the districts, where several cases are reported to have proved fatal.

DAKORE.

Operations performed by PURUSRAM NAGESH, General No. 721, Hospital Assistant, in charge of Dispensary.

Population, 7,072. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	....	....	....	....	....
1868	60	60	....	53	88·3

The population of the town is 7,072. There is no Vaccinator, and no expenditure for vaccination. The inhabitants of the town were unacquainted with the benefit of vaccination, and I found much difficulty in getting children for vaccination up to November last, although they were informed of the good effects of it; and there was great want of readiness among the inhabitants to submit their children to vaccination, and the unwillingness appeared among all castes up to November.

The lymph in use has been of good quality.

KURRACHEE.

One Government Vaccinator, under the Civil Surgeon, Assistant Surgeon E. MORTON, (Acting).

Population, 75,000. Average cost of each Vaccination, 1 Anna 2 Pies.

Years.	Total Vaccination.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	3,411	.....	.....	3,265	95·4
1868	3,035	.....	376	2,886	95·0

The favourable results attendant on vaccine operations in Kurrachee are due to the attention bestowed by the Vaccinator on the selection of typical vesicles, and the practice of direct vaccination from arm-to-arm. The people generally do not show any unwillingness to the removal of lymph from the vesicles, and allow their children to be taken about for vaccination purposes for a small gratuity and free conveyance.

In proportion to the rising importance of Kurrachee, and its yearly increasing population, vaccination does not appear to be progressive. During the year under report, as compared with the previous year, there has been a decrease of 376. From the annexed comparative table, showing the number vaccinated annually since 1864, it is apparent that for the last four years it can scarcely be said to have increased. The total number operated on was very small in comparison to the population, which may be approximately estimated at 75,000. It therefore admits of but little question that the prophylactic benefits of vaccination are not clearly understood, much less appreciated by the people.

In a daily increasing and populous place like Kurrachee, the seaport and outlet for the traffic of Sind and the Punjaub, every effort "to render the protective system of vaccination more extended, efficient, and complete," to dispel the prejudices of some, and to overcome the apathy and indifference of others, should be put forth. Every means to keep the subject constantly before the people should be resorted to, and no opportunity of explaining and impressing upon their mind the advantages of infantile vaccination, should be lost. These remarks apply more particularly to the town of Kurrachee, where opposition, through prejudice and ignorance, shows itself in the persistent refusal of a large number of the inhabitants to allow their children to be vaccinated. A comparison with the birth-rate of the town would prove interesting, but unfortunately no reliable data can be obtained, on which to base a comparison of the relative proportion of births to the number of children vaccinated.

To awaken the people to the prophylactic benefits of vaccination, I would recommend that an energetic intelligent man, himself convinced of its blessing and capable of convincing others, equal to giving inquirers a history of vaccination, its progress, termination, and preventive virtues, and able to meet their questions with full and satisfactory replies, be employed on an adequate salary, with the present Vaccinator, as his assistant. The exertions of a man of tact and kindly feeling, daily moving in the midst of the residents in the town and its vicinity, seeking opportunities of explaining the principles of vaccination, and endeavouring to persuade them of its benefits, would, I have little doubt, be crowned with success. The barriers of prejudice once broken down, and the minds of the people enlightened on the subject, a large increase in the number of operations will testify to the appreciation of its advantages by many, but I fear this increase at least will only be comparative; the apathy and indifference of the masses can alone be overcome by legislation stepping in and making vaccination compulsory.

It is worthy of note that the ignorant and destitute Mekranees, so far removed from all civilizing influences, exhibit in the most marked manner their estimate of the value of vaccination. At certain seasons of the year they come flocking into Kurrachee seeking employment, and eagerly resort to the Civil Hospital, seeking to be operated on,—young, old, and middle-aged alike present themselves. Very different appear to be the views of Parsee residents on the subject. They have a decided repugnance to infantile vaccination. Under no circumstances will they permit their children to be operated on until they are two years of age, and even then it is a matter of persuasion with them.

The vaccine lymph in use throughout the year was of the best quality and description, and the vesicles were well-formed and distinctive.

I have to remark, in conclusion, there was no epidemic of small-pox, and not a single instance of inoculation was brought to my notice.

HYDRABAD.

One Government Vaccinator, under the Civil Surgeon, Assistant Surgeon T. HOLMESTED (Acting).

Population, 40,000. Total cost, Rs. 180, of which one-third was paid by the Municipality. Average cost of each Vaccination, 1 Anna and 6 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,702	.....	.....	1,615	94·9
1868	1,847	145	.....	1,827	98·8

During the last year 1,847 vaccinations were performed. This shows an increase of 145 over the preceding year. The lymph has been good the whole year. The Vaccinator tells me that Assistant Surgeon Ffolliott, once, at the beginning of the year, procured a fresh supply.

There were a few small-pox cases in Hydrabad in the early part of the year, but since August, the time of my taking charge of the civil duties, not a case has been seen.

The Vaccinator reports that the Moonshee class of people object to have their children vaccinated; about a hundred of their children are now unprotected; as most of them are in Government employ, I think it should be made compulsory.

SHIKARPOOR.

One Government Vaccinator, under the Civil Surgeon, Assistant Surgeon J. F. KEITH, M.B. (Acting).

Population, 45,000. Total cost, Rs. 297, of which a portion was paid by the Municipality. Average cost of each Vaccination, 3 Annas 10 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	1,490	....	....	1,434	96·2
1868	1,240	....	250	1,188	95·8

In the Civil Hospital last year there were four cases of small-pox of a mild character. In the Dispensary vaccination seems very successful. I have visited the Dispensary, for the purpose of seeing how it was done, and I believe it to be most successful. In the city there were 15 cases of small-pox, and one death.

KOTREE.

One Municipal Vaccinator, under the Civil Surgeon, Assistant Surgeon J. WILLIAMS, M.D. (Acting).

Population, 20,626. Total cost, Rs. 268. Average cost of each Vaccination, 3 Annas 9 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	893	....	....	810	90·7
1868	1,150	257	....	1,089	94·7

In the column of successful vaccinations there is an increase of 279, as compared with the preceding year 1867; this is due chiefly to vaccination being carried on in the villages around Kotree. The greater percentage of success is owing probably to superior lymph supplied me by Dr. Pinkerton in tubes in the month of February. Since using this lymph the vesicles are found well and fully developed. There has been but little small-pox in the neighbourhood of Kotree during the past year; a few cases

have been traced to inoculation, and reported to the District Magistrate. In Kotree town there were 508 cases vaccinated, against 420 in 1867; and in the district 642, against 473.

I have asked for the number of births that occur within this talooka, or even town, but it appears no such return is made; until something like an accurate registration of births is kept, it will be impossible to carry on vaccination efficiently.

The Vaccinator, Majlis Rai, has worked hard and zealously; he has been rewarded by the Municipality by an increase of salary.

SEHWAN.

Operations performed by Mr. Apothecary POLLARD, in Medical charge of Dispensary.

Population, 4,800. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	163	....	....	148	90·8
1868	133	....	30	110	82·7

The number of children vaccinated during the year 1868 has been 133, of which number 110 have been successful operations. Last year there were 163 vaccinated, of which 148 were successful; the year 1868, therefore, shows a decrease in successful operations of 38. The population, and particularly the Hindoo portion, are still averse to the operation being performed on their children, and as no coercive measures are allowed, great difficulty is experienced in procuring subjects. On the arrival of the Collector, Colonel Lambert, in the district, about the middle of December 1868, I made known to him the difficulties I experienced, and the small amount of assistance rendered by the officials and influential men of the town in carrying out vaccination, and he kindly directed the Mooktyarkar and Mookee of the town to use more exertion in the matter, and to report to him weekly the progress made.

Since this time I have been able, through their assistance, to procure more children, and I hope to be able to carry out vaccination more successfully for the future. The lymph used in the early part of the year was continued from the previous year, and was originally supplied in capillary tubes by the Superintendent of Vaccination, and found to be very good; latterly, lymph has been received from the District Native Vaccinator, which is also good: this, I am informed, was also established from capillary tubes, supplied by the Superintendent of Vaccination.

JACOBABAD.

Operations performed by the Dispensary establishment under the Civil Surgeon, Assistant Surgeon H. R. L. McDougall, M.D.

Population, 15,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	11	.....	.....	4	36·4
1868	46	35	.....	16	34·8

I regret that I am unable to furnish any report on the subject of vaccination generally, and more particularly on the points noted in the Deputy Inspector General of Hospitals', Sind Division Circular, as I have no data at all on which to found such a report. Since the establishment of a District Vaccinator, who is in no way under my control, the number of applicants at the Dispensary has been very small, and of that small number the greater part came from a distance and not from the town. For instance, the 11 cases in December came from a distance of about 10 miles; they were the children of a few families of Jats, who had come from the Khelat territory for the cold weather.

SUKKUR.

Operations performed by the Apprentice, under Mr. Apothecary A. Wilson, in Medical charge Charitable Dispensary.

Population, 12,000. Total cost, Rs. 60. Average cost of each Vaccination, 1 Anna and 2 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	677	....	....	641	94·7
1868	717	40	....	669	93·3

717 persons were vaccinated during the year 1868; of these, there were 1 Christian, 373 Mussulmans, 337 Hindoos, and 6 other castes. 669 were successful, 29 unsuccessful, and 19 doubtful. During the month of November 10 adult convicts, of

the Bukkur Jail, were vaccinated at the Charitable Dispensary, and included in the return. Vaccination is performed weekly by the Dispensary establishment, viz.: the Medical Apprentice and Goorgah, and the only cost attending the vaccination carried on in both towns of Sukkur is that of a Peon, at Rs. 5 per mensem, or Rs. 60 per annum, who is attached to the Dispensary, for the purpose of bringing the children for vaccination.

BOOLA KHAN'S TANDA.

Operations performed by SYPHOON MULLICK (General No. 215), Hospital Assistant, in charge of Dispensary.

Population, 754. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	88	....	....	67	76·1
1868	88	....	....	82	93·2

88 cases of vaccination were performed during the past year, out of which 82 were successful, 3 doubtful, and 3 unsuccessful, also. The lymph used for vaccination was good. Having no Peon or Police Sepoy to render me assistance, I experience great difficulty in collecting the children, the people not being willing, in many instances, to bring them without a little persuasion. I think if this matter were laid before the Commissioner in Sind, or the Superintendent of Police, they might be induced to give orders for a Peon or Police Sepoy to render assistance when it is needful.

TATTA.

Operations performed by Sub-Assistant Surgeon GONSALVES, L. M., in charge Charitable Dispensary.

Population, 7,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	20	....	....	20	100·0
1868	265	245	....	251	94·7

Vaccination was commenced in the town of Tatta by the Medical Officer in charge of the Tatta Charitable Dispensary in December 1867, and during that month 20 persons were vaccinated. Before the Dispensary was established (which took place in November 1866) it was carried on by one of the Government itinerant Vaccinators, but it appears that between that time and December 1867 no vaccination was carried on in this town. During the year 1868, 265 persons were vaccinated in the town of Tatta, being on an average of 22 per month.

In every hundred of population 3·78 were vaccinated. Of 265 vaccinated, 251 were successful, 8 doubtful, and 6 unsuccessful. Throughout the year fresh lymph was employed, except during the month of December 1868, when the result having proved unfatisfactory, fresh lymph was obtained from the Superintendent of Vaccination, Sind Circle. Vaccination was generally carried on in the town, and not at the Dispensary.

Small-pox prevailed in the town during the months of November and December, and it still continues, but to what extent I have not been able to ascertain.

Having been in charge of the Dispensary only four and twenty days, I regret my inability to make any further remarks.

KULLADGHEE.

One Municipal Vaccinator, under Civil Surgeon, Assist. Surgeon J. Simpson, M.B.

Population, 9,362. Total cost, Rs. 54-15-0. Average cost of each Vaccination, 3 Annas and 6 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	....	....	....	....	....
1868	628	628	....	628	100

The above result dates from 1st February 1868, as previous to this date no vaccination records were kept in this Hospital, owing to the fewness of the vaccinations. During the year under report, viz: from 1st February 1868, 378 persons were vaccinated in the Civil Hospital by the 1st and 2nd Hospital Assistants, and from 1st July 1868 (on which date a Vaccinator was appointed by the Municipality) 250 were vaccinated by the Municipality's Vaccinator. Total number vaccinated during the year under report was 628. Great assistance was given by the Magistrate of this district in carrying on the operations, but the Fouzdar is very indifferent and inattentive in assisting the Vaccinator.

The number vaccinated did not increase so much as it was expected it would do. Most of the classes of Hindoos, such as Brahmins, Marathas and low castes, were generally willing to have their children vaccinated, but, I regret to say, that owing to caste prejudices, and ignorance of the benefit derived from the operation, the Mahomedans and Lingayets at this station, and the villages within reach, required much persuasion to have their children brought for vaccination.

No case of small-pox was observed during the year under report.

The lymph and vesicles were good, up to a short time ago, and a fresh supply is now desirable.

BAGULKOTE.

Operations performed by AMROOTA TATTIA (General No. 460), Hospital Assistant, in Medical charge of Dispensary.

Population, 12,247. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	...	...	...	...	.....
1868	113	113	...	102	90·2

In conformity with the instructions contained in Notification dated 27th November 1867, the Charitable Dispensary was established at Bagulkote, but the necessary arrangements for the immediate opening of the institution not having been completed, I was obliged to use my utmost endeavours to put them in readiness for the completion of the work. In the absence of any definite instructions, vaccine operations were not at first commenced in this institution, but subsequently vaccination was commenced, on the receipt of Circular No. 2,990, dated 2nd August 1868, from the Inspector General Indian Medical Department. The number vaccinated of males was 65, and females 48.

The lymph now in use is of superior quality, it having never failed. The lymph was received from the Assistant Vaccinator of this talooka. Small-pox prevailed in the town and surrounding villages mostly to the north side in the months of March, April, and May; about thirty children were attacked in this town, and by the end of May the epidemic had disappeared.

BHOOJ.

Three Native States' Vaccinators, under Mr. Dorabjee Hormusjee, G.G.M.C., in charge His Highness the Rao of Kutch's Dispensary and Hospital.

Population, 18,606. Total cost, 807-1-7. Average cost of each Vaccination, Rs. 1-4-8.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	705	....	....	592	83·1
1868	624	....	81	565	90·5

During the year 1868 there were 624 vaccinations performed at the Dispensary, and the principal towns of Kutch, viz.: Mandavee, Moondra, and Anjar, being 81 less than in 1867. I am sorry to observe that I was again obliged to carry on vaccination last year on a limited scale, in consequence of some disputes pending between His Highness the Rao and his Bhyats; the authority of the former was not recognised by the latter, hence, when the Vaccinators went round the towns belonging to the latter, they not only received no assistance from them, but great opposition was experienced from the leading members; it was therefore necessary to confine vaccination to a limited space, viz.: to the towns belonging to His Highness alone, and hence the necessity of locating the Vaccinators at Mandavee, Moondra, and Anjar. Unless some arrangement be adopted, by which Bhyats can be made to allow the Vaccinators to vaccinate in their towns, I am sure vaccination will continue stationary.

ADEN.

One Government Vaccinator, under the Civil Surgeon, Surgeon R. W. James, M.D.

Population, 25,000. Total cost, Rs. 180. Average cost of each Vaccination, 3 Annas 11 Pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1867	628	.....	.....	416	66·2
1868	725	97	.....	563	77·6

There has been an increase of 97 in the number vaccinated this year, as compared with 1867, but this is due to H. M's. Steamer *Star* bringing 120 captured slaves to this station during the early part of December.

The supply of lymph was ample and constant during the year, and I was able to comply with the demands of the Medical Officers of the 2nd Queen's Royals and 7th Regiment Native Infantry.

The quality of the lymph has been good, the vesicles being large and well developed. Aden was free from small-pox from February to November, but 20 cases were admitted during December, the result of direct importation of the disease from Lahaj and by the *Star*.

APPENDIX.

TABLE

VACCINATION UNDER SUPERIN

Table showing the Number and Names of the Circles and their Superintendents; the with those of last year; the Total Number arranged according to Sex, Caste, Number of Operations performed by

Number.	Circles.	Names of the Medical Officers, Superintendents of Vaccination.	Number of Native Vaccinators attached.		Total Number Vaccinated.	Compared with last year.		
			1868	1867		1867.	Increase.	Decrease.
1	Central	Assistant Surgeon Turnbull, M.D.	29	29	52,957	52,462	495	.....
		" Langley, B.A. (Acting)	12*	9*	5,953	4,120	1,833	.....
		Surgeon T. Miller, M.D. (Acting)						
2	Southern	Assistant Surgeon J. Raby	22	22	23,962	20,979	2,983	.....
		Surgeon H. Day, M.D. (Acting)	9*	9*	9,463	6,941	2,522	.....
		Surgeon Major H. Pitman (Acting)						
3	Northern	Dr. Muncherjee B. Colah (Acting)	33	33	71,203	68,282	2,921	.....
			2*	2*	2,175	1,253	922	.....
4	Western	Assistant Surgeon T. Cody (Acting)	14	14	32,342	37,121	.....	4,779
			2*	...	410	.....	410	.....
5	Sind	Surgeon J. Pinkerton, M.D.	17	17	38,859	33,821	5,038	.....
		Assistant Surgeon J. Ffolliott	13†	13†	23,612	21,854	1,758	.....
		Surgeon Major J. Gilbert (Acting)						
		" M. Style (Acting)						
6	Kattiawar	Surgeon E. R. Butler, M.D.	8	8	10,523	7,829	2,694	.....
7	Rewa Kanta	Assistant Surgeon J. T. Welsh, M.D.	5	5	7,507	7,967	.....	460
8	Presidency	Sub-Assistant Surgeon Anunta Chandroba.	6	6	10,757	10,985	.....	228
		Total	172	167	289,723	273,614	16,109	.....

* Municipal Vaccination.

No. I.

TENDENTS IN BRITISH TERRITORY.

Number of Vaccinators employed; the Total Vaccinations performed, and compared Age, and Result; the Ratio of Successful to Total Vaccinated; and the Average each Vaccinator, for the year 1868.

Total Number Vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Average Number of Persons Vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one Year.	Above one Year.	Successful.	Unsuccessful.	Doubtful.		
27,753	25,204	47,015	2,264	16	.....	3,662	19,633	33,324	51,001	931	1,025	96·3	1,826
3,250	2,703	5,204	537	11	1	200	2,581	3,372	5,241	348	364	88·0	496
13,055	10,907	21,164	1,578	230	.....	990	5,131	18,831	22,744	575	643	94·8	1,089
5,275	4,188	8,522	696	21	.....	230	3,374	6,089	9,095	255	113	96·1	1,051
38,073	33,130	60,427	5,810	6	168	4,792	46,872	24,331	65,403	2,202	3,598	91·8	2,158
1,201	974	1,703	381	...	.....	91	1,443	732	1,999	119	57	91·9	1,087
17,145	15,197	28,957	1,352	443	26	1,564	7,065	25,277	31,422	501	419	97·1	2,310
243	167	369	29	11	.....	1	121	289	391	17	2	95·4	205
21,269	17,590	4,565	31,759	...	.....	2,535	14,285	24,574	38,053	247	559	97·9	2,286
12,930	10,682	2,885	18,648	...	2	2,077	7,740	15,872	22,966	303	343	97·2	1,816
5,063	4,860	9,014	1,342	...	.....	167	4,914	5,609	9,905	264	354	94·1	1,315
3,874	3,633	7,030	391	...	.....	86	3,159	4,348	7,094	239	174	94·5	1,501
5,727	5,030	7,170	1,453	962	949	220	4,793	5,964	8,149	1,033	1,575	75·7	1,793
155,458	134,265	204,025	66,237	1,700	1,143	16,615	121,111	168,612	273,363	7,044	9,316	94·3	1,683

† Local Vaccination.

TABLE

Vaccination under Superintendents

Table of Vaccination through the Agency of Native Chiefs, arranged according to for the

Number.	Circles and Stations.	Medical Officers.	Number of Native Vaccinators attached.		Total Number Vaccinated.	Compared with last year.		
			1868	1867		1867.	Increase.	Decrease.
1	Central	Assistant Surgeon Turnbull, M.D. " Langley, B.A. (Actg.) Surgeon T. Miller, M.D. (Acting)	2	2	1,602	1,668	.....	66
2	Southern	Assistant Surgeon J. Raby Surgeon H. Day, M.D. (Acting) Surgeon Major H. Pitman (Acting)	22	22	17,783	13,666	4,117	.....
3	Northern	Dr. Muncherjee B. Colah (Acting)	12	12	23,080	20,553	2,527	.....
4	Western	Assistant Surgeon T. Cody (Acting)	2	1	5,381	6,306	.....	925
5	Sind	Surgeon J. Pinkerton, M.D. Assistant Surgen J. Ffolliott Surgeon Major J. Gilbert (Acting) " M. Style (Acting)	1	1	2,105	2,529	.....	424
6	Kattiawar	Surgeon E. R. Butler, M.D.	34	30	39,023	32,046	6,977	.....
7	Rewa Kanta	Assistant Surgeon J. T. Welsh, M.D.	7	6	7,083	5,359	1,724	.....
8	Kutch	Mr. Dorabjee Hormusjee, G.G.M.C.	3	3	624	705	.....	81
		Total	83	77	96,681	82,832	13,849	1,496

No. II.

AND OTHERS IN NATIVE TERRITORY.

the Circles of Vaccination and Stations, and showing Details as in Table No. I.,
year 1868.

Total number Vaccinated, arranged according to													
Sex.		Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Average Number of Persons Vaccinated by each Vaccinator.
Males.	Females.	Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
833	769	1,516	65	.....	.....	21	779	823	1,495	87	20	95·3	846
9,777	8,006	16,146	835	24	.....	778	5,223	12,560	17,068	392	323	95·9	808
12,378	10,702	19,875	1,509	3	.....	1,693	11,897	11,183	20,939	967	1,174	90·7	1,757
2,782	2,599	5,264	56	47	.....	14	1,199	4,182	5,083	211	87	94·4	2,690
1,256	849	111	1,892	2	.....	100	662	1,443	1,891	166	48	89·8	2,105
21,187	17,836	33,628	5,306	.....	.....	89	13,698	25,325	35,924	1,776	1,323	94·1	1,148
3,642	3,441	6,802	212	.....	.....	69	2,334	4,749	6,649	276	158	93·8	1,012
299	325	316	308	.....	.....	.....	247	377	565	51	8	90·5	208
52,154	44,527	83,658	10,183	76	.....	2,764	36,039	60,642	89,614	3,926	3,141	92·6	1,167

TABLE

VACCINATIONS UNDER

Table of Vaccination under Civil Surgeons and others, arranged according to

Number.	Division of Deputy Inspectors General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached. 1868	Number of Native Vaccinators attached. 1867	Total Number Vaccinated.	Compared with last year. 1867.	Compared with last year. Increase.	Compared with last year. Decrease.	Sex. Males.	Sex. Females.
1	Presidency	Tanna	1*	1*	232	176	56	...	121	111
		Do. Police Hospital.	...	...	39	...	39	...	24	15
		Rutnagherry	1	1	1,432	1,302	130	...	868	564
		Carwar	1	1	362	308	54	...	198	164
		Do. Police	...	...	11	...	11	...	6	5
		Vingorla	...	...	382	151	231	...	229	153
		Surat	1	1	2,840	1,631	1,209	...	1,566	1,274
		Broach	1	1	1,266	1,226	40	...	784	482
		Alibaugh	...	...	335	200	135	...	200	135
		Bandora	...	...	336	93	243	...	208	128
		Coorla	...	...	109	77	32	...	57	52
		Gorun	...	1*	...	102	...	102	...	...
		Callian	...	...	37	104	...	67	20	17
		Bhewndy	...	...	87	78	9	...	57	30
		Dapoolie	...	...	252	123	129	...	127	125
		Sawunt Warree	...	...	28	58	...	30	19	9
		Honore	...	...	73	59	14	...	39	34
		Total	5	6	7,821	5,688	2,133	...	4,523	3,298
2	Poona	Poona	1	1	1,641	2,022	...	381	1,022	619
		Do. Charitable Dispensary	...	...	96	...	96	...	64	32
		Ahmednuggur	1	1	1,010	993	17	...	685	325
			1*	1*	808	735	73	...	516	292
		Do. Civil Hospital	...	...	130	...	130	...	92	38
		Do. Police do.	...	...	25	...	25	...	13	12
		Kurrar	...	...	73	...	73	...	41	32
		Sircy	...	...	38	...	38	...	15	23
		Barsee Dispensary	...	...	43	...	43	...	24	19
		Kulladghee	1*	...	628	...	628	...	340	288
		Sattara	1	1	3,177	1,344	1,833	...	1,806	1,371
		Sholapoor	1	1	671	1,655	...	984	379	292
		Do. Charitable Dispensary	...	...	78	...	78	...	53	25
		Dhoolia	1	1	878	808	70	...	506	372
		Nassick	1	1	1,013	1,079	...	66	530	483

* Municipa

No. III.

Civil Surgeons and others.

Division, and showing the Details as in Table No I., for the year 1868.

Total Number Vaccinated, arranged according to											
Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Number of Persons Vaccinated by each Vaccinator.
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
174	15	29	12	2	90	142	191	13	28	82·3	232
38	1	...	...	.....	8	31	29	3	7	74·4	.....
1,322	108	2	...	.....	596	836	1,080	136	216	75·4	1,432
279	32	49	...	2	56	306	306	42	14	84·5	362
9	1	1	...	...	11	.....	11	.....	.....	100.	.....
336	27	19	...	.....	65	317	358	17	7	93·7	.....
1,882	759	10	105	84	1,241	1,599	2,370	112	358	83·4	2,840
784	391	3	88	.....	650	616	1,018	27	221	80·5	1,266
274	16	16	...	29	64	271	263	56	16	78·5	.....
96	14	225	1	.....	54	282	286	46	4	85·1	.....
43	22	37	7	.....	41	68	55	31	23	50·4	.....
...	...	...	...	.....	.....	.....	.....	.....	.....	.....	.....
16	9	...	2	10	14	23	25	.....	12	67·5	.....
31	29	...	...	27	21	66	56	20	11	64·4	.....
236	14	2	...	...	29	223	228	5	19	90·5	.....
21	6		...	...	15	13	28	.....	.....	100·	.....
50	11	10	...	2	17	56	68	5	.....	93·1	.....
5,591	1,455	414	225	136	2,972	4,849	6,372	513	936	81·4	1,226
1,226	267	78	70	.....	700	941	1,387	112	142	84·5	1,641
85	9	2	...	.....	29	67	67	20	9	69·8	.....
871	94	6	...	39	679	331	914	43	53	90·5	1,010
710	67	9	...	22	609	199	713	48	47	80·2	808
119	9	...	...	2	48	82	100	13	17	76·6	.....
23	2	...	...	.....	21	4	23	1	1.	92·0	.....
70	3	...	...	.....	15	58	60	5	8	82·2	.....
28	10	...	...	.....	2	36	37	1	.....	94·5	.....
13	30	...	...	.....	17	26	32	10	1	74·4	.....
446	119	1	...	62	266	362	628	.....	.....	100·	628
2,978	166	26	3	4	1,147	2,030	2,825	45	307	88·9	3,177
429	200	3	...	39	291	380	585	43	43	87·2	671
74	4	...	...	.....	34	44	68	.....	10	87·2	.....
654	77	18	...	129	662	216	796	53	29	90·5	878
809	78	37	...	89	505	508	956	37	20	94·3	1,013

TABLE

Number.	Division of Deputy Inspectors General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached. 1868	1867	Total Number Vaccinated.	Compared with last year. 1867.	Increase.	Decrease.	Sex. Males.	Females.
2	Poona (*continued*)	Bagulkote	...	...	113	.....	113	.....	65	48
		Punderpoor	...	...	90	.....	90	.....	51	39
		Waie	...	...	5	.....	5	.....	1	4
		Moondegode	...	...	.....	.....	.....	.....	.....	.....
		Belgaum	1	1	578	803	.....	225	297	281
		Dharwar	1	1	661	635	26	.....	354	307
		Kolapoor	1	1	2,028	1,751	277	.....	1,068	960
		Do. (Dispensary)	...	...	334	.....	334	.....	160	174
		Do. Infantry	...	...	255	.....	255	.....	130	125
		Gokak	...	...	.....	.....	.....	.....	.....	.....
		Peint	...	...	55	.....	55	.....	30	25
		Hullial	...	...	25	.....	25	.....	20	5
		Dhurrumgaum	...	...	108	.....	108	.....	55	53
		Total	11	10	14,561	11,825	2,736	.....	8,317	6,244
3	Northern	Ahmedabad	2*	2*	4,604	4,273	331	.....	2,357	2,247
		Do. Dispensary	...	...	.....	8	.....	8	.....	.....
		Kaira	1	1	796	867	.....	71	492	304
		Rajkote	1	1	308	999	.....	691	162	146
		Dholka	...	...	34	.....	34	.....	18	16
		Veerumgaum	...	...	122	.....	122	.....	71	51
		Dakore	...	...	60	.....	60	.....	34	26
		Total	4	4	5,924	6,147	.....	223	3,134	2,790
4	Sind	Kurrachee	1	1	3,035	3,411	.....	376	1,632	1,403
		Do. Jail	...	...	49	.....	49	.....	49	.....
		Do. Dispensary	...	...	.....	116	.....	116	.....	.....
		Hydrabad	1	1	1,847	1,702	145	.....	1,151	696
		Shikarpoor	1	1	1,240	1,490	.....	250	645	595
		Kotree	1*	1*	1,150	893	257	.....	693	457
		Sukkur Dispensary	...	...	717	677	40	.....	495	222
		Jacobabad Civ. Hospital	...	...	46	11	35	.....	27	19
		Larkhana Dispensary	...	...	410	415	.....	5	228	182
		Mehur do.	...	...	88	192	.....	104	48	40
		Sehwan do.	...	...	133	163	.....	30	78	55
		Jerruck do.	...	...	69	42	27	.....	41	28
		Rohree do.	...	...	390	377	13	.....	242	148
		Oomerkote do.	...	...	156	38	118	.....	97	59
		Nuggur Parkur do.	...	...	126	81	45	.....	59	67

* Municipal

No. III.—(*continued*).

Total number Vaccinated, arranged according to											
Caste.					Age.		Result.			Ratio per cent. of Successful to Number Vaccinated.	Number of Persons Vaccinated by each Vaccinator.
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
93	20	.....	.....	.....	61	52	102	11	.....	90·2	.....
84	6	.....	.....	.....	44	46	61	19	10	67·7	.....
5	.....	.....	.....	.....	.....	5	4	1	.....	80·0	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
445	119	14	.....	.....	321	257	566	9	3	97·9	578
472	168	21	.....	.....	197	464	536	89	56	81·1	661
1,979	47	2	.....	.....	395	1,633	2,013	9	6	99·2	2,028
284	47	3	.....	.....	105	229	328	2	4	98·2	.....
210	43	2	.....	.....	55	200	185	70	.....	72·5	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
54	1	.....	.....	.....	23	32	19	34	2	34·5	.....
18	7	.....	.....	.....	12	13	16	9	.....	64·0	.....
95	12	1	.....	.....	45	63	92	16	.....	85·2	.....
12,274	1,605	223	73	386	6,283	8,278	13,113	680	768	90·0	1,190
3,540	1,040	4	17	3	3,051	1,553	4,489	78	37	97·5	2,302
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
682	67	2	.....	45	695	101	638	84	74	80·1	796
231	63	4	1	9	167	141	259	28	21	84·1	308
25	9	...	.....	.....	24	10	34	.....	.....	100·	.....
111	11	...	.....	.....	61	61	106	8	8	86·8	.....
55	5	...	.....	.....	38	22	53	3	4	88·3	.....
4,644	1,195	10	18	57	4,036	1,888	5,579	201	144	94·1	1,427
830	1,792	77	54	282	1,468	1,567	2,886	82	67	95·0	3,035
.....	49	...	.....	.....	.....	49	49	.....	.....	100·	.....
.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....
819	939	54	.....	35	1,209	638	1,827	11	9	98·8	1,847
594	624	...	.....	22	1,176	64	1,188	23	29	95·8	1,240
83	978	14	.....	75	1,053	97	1,089	30	31	94·7	1,150
373	337	1	.....	6	511	206	669	29	19	93·3	.....
1	45	...	.....	.....	20	26	16	12	18	34·8	.....
234	176	...	.....	.....	247	163	385	14	11	93·9	.....
16	72	...	.....	.....	36	52	88	.....	.....	100·	.....
31	102	...	.....	.....	67	66	110	22	1	82·7	.....
35	34	...	.....	.....	1	68	62	.....	7	89·8	.....
205	185	...	.....	.....	221	169	389	.....	1	99·7	.....
123	14	2	.....	17	45	111	150	6	.....	96·1	.....
119	7	...	.....	.....	68	58	107	14	5	84·9	.....

TABLE

Number.	Division of Deputy Inspectors General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached.		Total Number Vaccinated.	Compared with last year.			Sex.	
			1868	1867		1867.	Increase.	Decrease.	Males.	Females.
4	Sind (*continued*).	Halla Dispensary.....	...	...	207	75	132	.....	111	96
		Mahomed Khan's Tanda Dispensary	...	...	126	174	.....	48	68	58
		Boola Khan's Tanda Dispensary	...	...	88	88	.....	.....	45	43
		Meerpoor Buttora do.	...	...	145	273	.....	128	84	61
		Alliyar Ka Tanda do.	...	...	242	115	127	.....	144	98
		Khètty Bunder do.	...	...	85	58	27	.....	50	35
		Taroosha do.	...	...	97	254	.....	157	55	42
		Tatta do.	...	...	265	20	245	.....	160	105
		Mittee do.	...	...	63	16	47	.....	30	33
		Kippra do.	...	...	44	.....	44	.....	30	14
		Total...	4	4	10,818	10,681	137	.....	6,262	4,556
5	Aden.....	Aden	1	1	725	628	97	.....	495	230
		Grand Total....	25	25	39,849	34,969	4,880	.....	22,731	17,118

No. III.—(*continued*).

Total Number Vaccinated, arranged according to										Ratio per cent. of Successful to Number Vaccinated.	Number of Persons Vaccinated by each Vaccinator.
Caste.					Age.		Result.				
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
80	127	.....	.....	.....	92	115	202	5	.....	97·5	.....
74	52	.....	.....	.....	42	84	119	1	6	94·5	.....
20	68	.....	.....	.....	49	39	82	3	3	93·2	.....
49	95	.....	.....	1	88	57	124	7	14	85·5	.....
134	108	.....	.....	.....	105	137	238	.....	4	94·2	.....
50	35	.....	.....	.....	15	70	56	9	20	82·4	.....
21	76	.....	.....	.....	52	45	94	3	.....	81·8	.....
166	99	.....	.....	.....	126	139	251	6	8	94·7	.....
52	11	.....	.....	.....	9	54	61	.....	2	96·6	.....
44	.....	.....	.....	.....	14	30	42	2	.....	95·4	
4,153	6,025	148	54	438	6,714	4,104	10,284	279	255	95·0	1,818
23	45	7	.....	650	121	604	563	156	6	77·6	725
26,685	10,325	802	370	1,667	20,126	19,723	35,911	1,829	2,109	90·1	1,277

TABLE

General Abstract of Vaccination

Designation of Tables.	Number of Vaccinators.		Total Number Vaccinated.	Compared with last year.			Sex.	
	1868	1867		1867.	Increase.	Decrease.	Males.	Females.
No. 1. Vaccination under Superintendents in British Territory by Government Establishment	134	134	2,48,10	2,39,446	8,664	...	1,32,559	1,15,551
Do. do. by Local Funds do.	13	13	23,612	21,854	1,758	...	12,930	10,682
Do. do. by Municipalities do.	31	26	25,462	18,391	7,071	...	14,020	11,442
No. 2. Ditto ditto and others in Native territory.	83	79	96,681	82,832	13,841	...	52,154	44,527
No. 3. Ditto under Civil Surgeons	19	19	26,312	24,654	1,658	...	15,090	11,222
Do. in Dispensaries where there are no Vaccinators specially appointed to vaccinate	...	...	5,260	3,895	1,365	...	3,133	2,127
Do. at 5 Civil Stations do.	...	...	816	343	473	...	457	359
Total	280	271	4,26,253	3,91,415	34,838	...	2,30,343	1,95,910

No. IV.

FOR THE YEAR 1868.

Number Vaccinated, arranged according to										Ratio per cent. of Successful to Number Vaccinated.
Caste.					Age.		Result.			
Hindoos.	Mussulmans.	Christians.	Parsees.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.	
1,85,342	45,952	1,657	1,143	14,016	1,05,852	1,42,258	2,33,771	5,992	8,347	94·2
2,885	18,648	...	2	2,077	7,740	15,872	22,966	303	343	97·2
20,789	3,857	100	30	686	12,596	12,866	23,865	911	686	93·6
83,658	10,183	76	...	2,764	36,039	60,642	89,614	3,926	3,141	92·6
17,954	6,187	419	321	1,431	12,516	13,796	23,409	1,207	1,696	89·3
3,051	1,814	293	10	92	2,359	2,901	4,641	400	219	88·5
689	104	23	...	...		642	722	50	44	88·5
3,14,368	86,745	2,568	1,506	21,066	1,77,276	2,48,977	3,98,988	12,789	14,476	93·5

TABLE No. V.

Table of Ages.

Vaccination in 1868, arranged according to Age, whether performed under or above one year of Age.

Establishments.	Age.		Difference.		Total Vaccinated.
	Under one year.	Above one year.	Under.	Above.	
I.—Superintendents in British Territory....	121,111	168,612	.....	47,501	289,723
II.— Do. and others in Native do.	36,039	60,642	.....	24,603	96,681
III.—Civil Surgeons and others.....	20,126	19,723	403	.....	39,849
Total...	177,276	248,977	.....	71,701	426,253
I.—*Superintendents in British Territory.*					
Central Circle	22,214	36,696	.....	14,482	58,910
Southern do.....	8,505	24,920	.....	16,415	33,425
Northern do.....	48,315	25,063	23,252	.....	73,378
Western do.....	7,186	25,566	.....	18,380	32,752
Sind do.....	22,025	40,446	.....	18,421	62,471
Kattiawar do.....	4,914	5,609	.....	695	10,523
Rewa Kanta do.....	3,159	4,348	.....	1,189	7,507
Presidency do.....	4,793	5,964	.....	1,171	10,757
II.—*Superintendents and others in Native Territory.*					
Central Circle	779	823	.....	44	1,602
Southern do	5,223	12,560	.....	7,337	17,783
Northern do	11,897	11,183	714	.....	23,080
Western do	1,199	4,182	.....	2,983	5,381
Sind do	662	1,443	.....	781	2,105
Kattiawar do	13,698	25,325	.....	11,627	39,023
Rewa Kanta do	2,334	4,749	.....	2,415	7,083
Kutch	247	377	.....	130	624
III.—*Civil Surgeons, Government Vaccinators.*					
Rutnagherry	596	836	.....	240	1,432
Karwar	67	306	.....	239	373
Surat	1,241	1,599	.....	358	2,840
Broach	650	616	34	.....	1,266
Poona	700	941	.....	241	1,641
Ahmednuggur	748	417	331	.....	1,165
Sattara	1,147	2,030	.....	883	3,177
Sholapoor	291	380	.....	89	671
Dhoolia	662	216	446	.....	878
Nassick	505	508	.....	3	1,013
Belgaum	321	257	64	.....	578

Establishments.	Age.		Difference.		Total Vaccinated.
	Under one year.	Above one year.	Under.	Above.	
III.—*Civil Surgeons, Government Vaccinators.* —(continued).					
Dharwar	197	464	.....	267	661
Kolapoor	555	2,062	.....	1,507	2,617
Kaira	695	101	594	.....	796
Rajkote	167	141	26	.....	308
Kurrachee	1,468	1,567	.....	99	3,035
Do. Jail	.....	49	.....	49	49
Hydrabad	1,209	638	571	.....	1,847
Shikarpoor	1,176	64	1,112	.....	1,240
Aden	121	604	.....	483	725
Municipal Vaccinators under Civil Surgeons.					
Tanna	98	173	.....	75	271
Ahmednuggur	609	199	410	.....	808
Kulladghee	266	362	.....	96	628
Ahmedabad	3,051	1,553	.....	1,498	4,604
Kotree	1,053	97	956	.....	1,150
IV.—*Civil Hospitals and Dispensaries which have no Vaccinators.*					
Vingorla	65	317	.....	252	382
Alibaugh	64	271	.....	207	335
Bandora	54	282	.....	228	336
Coorla	41	68	.....	27	109
Oorun	.....	.....	.....	.....	.....
Callian	14	23	.....	9	37
Bhewndy	21	66	.....	45	87
Dapoolie	29	223	.....	194	252
Sawunt Warree	15	13	2	.....	28
Honore	17	56	.....	39	73
Poona	29	67	.....	38	96
Kurrar	15	58	.....	43	73
Sircy	2	36	.....	34	38
Barsee	17	26	.....	9	43
Sholapoor	34	44	.....	10	78
Bagulkote	61	52	9	.....	113
Punderpoor	44	46	.....	2	90
Waie	.....	5	.....	5	5
Moondegode	.....	.....	.....	.....	.....
Gokak	.....	.....	.....	.....	.....
Peint	23	32	.....	9	55
Hullial	12	13	.....	1	25
Dhurrungaum	45	63	.....	18	108
Ahmedabad	.....	.....	.....	.....	.....
Dholka	24	10	14	.....	34
Veerungaum	61	61	.....	.....	122
Dakore	38	22	16	.....	60
Kurrachee	.....	.....	.....	.....	.....
Sukkur	511	206	305	.....	717
Jacobabad	20	26	.....	6	46
Larkhana	247	163	84	.....	410
Mehur	36	52	.....	16	88

Establishments.	Age.		Difference.		Total Vaccinated.
	Under one year.	Above one year.	Under.	Above.	
IV.—*Civil Hospital and Dispensaries which have no Vaccinators.*—(continued).					
Sehwan	67	66	1	.....	133
Jerruck	1	68	.....	67	69
Rohree	221	169	52	.....	390
Oomerkote	45	111	.....	66	156
Nuggur Parkur	68	58	10	.....	126
Halla	92	115	.....	23	207
Mahomed Khan's Tanda	42	84	.....	42	126
Boola Khan's Tanda	49	39	10	.....	88
Meerpoor Buttora	88	57	31	.....	145
Allyar Ka Tanda	105	137	.....	32	242
Khetty Bunder	15	70	.....	55	85
Taroosha	52	45	9	.....	97
Tatta	126	139	.....	13	265
Mittee	9	54	.....	45	63
Kippra	14	30	.....	16	44

TABLE No. VI.

EMPLOYMENT RETURN OF SUPERINTENDENTS OF VACCINATION FOR THE YEAR 1868.

CENTRAL CIRCLE.

Superintendents.— Assistant Surgeon P. S. Turnbull, M.D.
" " E. H. R. Langley, A.B. (*Acting.*)
Surgeon T. Miller, M.D. (*Acting.*)

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.
January	1	25	5	125	4 Villages visited and inspected.
February	1	121	19	277	13 Do. Assistant Surgeon Langley inspected the work of General Nos. 40, 277, 263 and Poona Municipality's Vaccinator.
March	1	69	9	169	8 Do.
April	1	66	9	210	9 Do.
May	1	223	25	738	13 Do.
June	1	57	6	102	5 Do.
July	1	12	2	10	2 Do. Assistant Surgeon Turnbull inspected the work of the Poona Municipality's Vaccinator, Gen. Nos. 37, 40, 263, 23, 301 and 241. In this Circle 10 Vaccinators' work was examined.
August	3	262	9	613	13 Do.
September	1	22	2	105	4 Do.
October	7	217	12	221	11 Do.
November	6	100	8	349	19 Do.
December	1	.....	.....	.....	... ...
Total	25	1,174	106	2,919	

SOUTHERN CIRCLE.

Superintendents.— Assistant Surgeon J. RABY. Surgeon H. DAY, M.D. (*Acting*). Surgeon Major PITMAN, (*Acting*).

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	.....	.....	.....	.....	Assistant Surgeon Raby took charge on the 19th August. The work of Gen. Nos. 242, 35, 297, 228, 276, 234, 291, 71, 151, 218, and of eight Municipal and Jagheerdar Vaccinators was examined.
February ...	.....	.....	.....	.....	
March	.....	.....	.....	.....	
April	.....	.....	.....	.....	
May	.....	.....	.....	.....	
June	.....	.....	.....	.....	
July	.....	.....	.....	.....	
August	.....	.....	.....	.....	
September ...	6	66	6	92	3 Villages visited and inspected.
October	10	100	10	407	10 Do.
November ...	15	213	19	782	15 Do.
December. ...	14	269	15	771	17 Do.
Total...	45	648	50	2,052	

NORTHERN CIRCLE.

Superintendent.—Dr. MUNCHERJEE BYRAMJEE COLAH, M.D. (*Acting*).

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.
January	4	214	18	966	33 Villages visited and inspected.
February.....	5	311	23	1,328	34 Do.
March	5	287	22	1,968	44 Do.
April	6	363	18	1,159	36 Do.
May	4	221	23	1,570	44 Do.
June	4	85	9	403	16 Do.
July.....	.....	.....	.....	.....	... Do.
August	.....	26	4	57	2 Do.
September ...	1	117	6	137	6 Do.
October	1	34	4	170	6 Do.
November ...	5	395½	26	2,041	59 Do.
December ...	5	255	19	1,917	43 Do. The work of General Nos. 127, 91, 170, 177, 52, 293, 248, 275, 19, 299, 309, 287, 56, 29, 31, 203, 296, 1 Native State Vaccinator, 2 Municipal Vaccinators, and 1 Candidate was examined.
Total...	40	2,309	172	11,716	

WESTERN CIRCLE.

Superintendent.—Assistant Surgeon T. Cody, (*Acting*).

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.
January	.....	.....	.....	.....	Assistant Surgeon Cody has only been acting since the 14th October. The work of Gen. Nos. 58, 296, 1 Dispensary and 1 Municipality was examined.
February	.....	.....	.....	.....	
March	.....	.....	.....	.....	
April	.....	.....	.....	.....	
May	.....	.....	.....	.....	
June	.....	.....	.....	.....	
July	.....	.....	.....	.....	
August	.....	.....	.....	.....	
September	.....	.....	.....	.....	
October	.....	.....	.....	.....	
November	3	33	3	387	9 Villages visited and inspected.
December	3	35	10	378	13 Do.
Total	6	68	13	765	

SIND CIRCLE.

Superintendents.— Surgeon J. Pinkerton, M.D,
Assistant Surgeon J. Folliott.
Surgeon Major J. Gilbert, (*Acting*).
" " M. Style, (*Acting*).

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.
January	6	39	11	496	19 Villages visited and inspected.
February	13	88	23	838	55 Do.
March	14	140	20	1,015	70 Do.
April	3	119	3	.....	The work of Gen. Nos. 190, 77, 148, 195, 246, 185, 295, 114, 1 Local Vaccinator and two Dispensaries was examined.
May	3	216	3	.....	
June	.....	.....	.....	.....	
July	.....	.....	.....	.....	
August	2	210	2	.....	
September	3	178	4	122	5 Do.
October	2	44	3	471	11 Do.
November	3	83	3	371	20 Do.
December	9	142	9	671	25 Do.
Total	58	1,259	81	3,984	

KATTIAWAR CIRCLE.

Superintendent.—Surgeon E. R. Butler, M.D.

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.	
January	.....	.....	.....	.....		
February.....	.....	.....	.....	.....		
March	5	94	5	46	3 Villages visited and inspected.	
April	11	197	18	924	21 Do.	During part of October and November Dr. Butler was doing Civil and Military duties. The work of Gen. Nos. 103, 112, 207, 186, 141, 305 and 18 Chiefs' Vaccinators was examined.
May	12	180	12	412	8 Do.	
June	.....	.....	.....	.....	Monsoon.	
July.....	.....	.....	.....	.....		
August.....	.....	.....	.....	.....		
September ...	.....	.....	.....	.....		
October	11	182	13	668	19 Do.	
November ...	24	266	27	1,511	37 Do.	
December ...	18	247	22	1,522	44 Do.	
Total...	81	1,166	97	5,083		

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon J. T. Welsh, M.D.

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.	
January	6	114	12	505	21 Villages visited and inspected.	
February.....	.....	.....	.....	.....		
March	.....	.....	.....	.....		
April	.....	.....	.....	.....		
May.....	.....	.....	.....	.....		
June	.....	.....	.....	.....		
July	.....	.....	.....	.....		
August.....	.....	.....	.....	.....		
September ...	.....	.....	.....	.....		
October	7	121	13	1,014	30 Do.	Dr. Welsh was in charge of the Guzerat Bheel Corps and Dohud Jail: he is ordered only to travel 4 months in the year. The work of Gen. Nos. 202, 255, 258, 254 and of two Chiefs' Vaccinators was examined.
November ...	13	198	20	646	40 Do.	
December....	14	184	18	1,530	43 Do.	
Total...	40	617	63	3,695		

TABLE No. VII.

Castes in which Vaccination was Performed.

Castes.	Number Vaccinated.
Christian	2,568
Hindoo	314,368
Mussulman	86,745
Parsee	1,506
Other Castes	21,066
Total	426,253

TABLE No. VIII.

Table of Vaccinations in the Bombay Army for the year 1868.

		Number Vaccinated in 1868.	
		Europeans.	Natives.
Native Regiments.	Regiments	15	1,731
	Lines	1	276
	Bazaars	.....	132
	Cantonment Bazaars	176	3,557
	Ordnance and other Departments	.....	43
	Total	192	5,739
	Grand Total	5,931	

No. 1939.

GENERAL DEPARTMENT.

Bombay Castle, 13th August 1869.

Letter from the Inspector General, Indian Medical Department, No. 2289, dated 3rd June 1869—Forwarding a report on Vaccination for 1868, prepared by the Superintendent General of Vaccination, as directed in Government Resolution No. 1813, dated the 30th September last.

Further letter from the Inspector General, Indian Medical Department, No. 2664, dated 27th July 1869—Containing his observations on the above report.

RESOLUTION.—In the year under report there were 280 Vaccinators employed throughout the Presidency, and the total number of Vaccinations in civil life amounted to 426,253, giving an increase of 34,838 over the number shown in the preceding year's report. Of these operations 93·5 per cent. were successful. The total cost was Rs. 1,11,524, which gives annas 4 and pies 2 for each Vaccination.

2. His Excellency in Council learns with satisfaction that the recent arrangements by which the Department has been put on a better footing in respect to pay, are producing such good results.

3. The unavoidable frequent changes that have taken place amongst the Superintendents of Circles, owing chiefly to the demand for Medical Officers in connection with the Abyssinian Expedition, are to be regretted. Efficient superintendence of work of this kind must, in a great measure, depend upon the Officers having a thorough acquaintance with the requirements of the Districts under their charge, and a personal knowledge of their men.

4. The suggestion that the Vaccinators in the service of Native States and Municipalities should neither be employed nor discharged without the approval of the Superintendents of Circles, and that their pay should also be fixed by the same authorities is a good one; and will doubtless commend itself to the approval of the several Chiefs and Municipal Commissioners.

5. The proposal to transfer Sattara from the Southern to the Central Division, and Kulladghee from the Central to the Southern, is approved, and may be adopted.

6. It is satisfactory to learn that so much practical good has resulted from the registers that are now kept in each village. They will, independently of their utility for statistical purposes, afford an effective check on the returns of the Vaccinators. Government desire that the special attention of Collectors and their Assistants be given to the inspection of these Registers. It should be the duty of the Mamlutdars' Carkoons in whose circles the villages are situated, to pay as much attention to the accurate preparation of these and other statistical documents, as to that of the ordinary revenue accounts of the village.

7. Dr. Turnbull's remarks as to the zealous manner in which the Municipal Commissioners in the Sattara Collectorate watch the work performed by the Vaccinators in their employ, proves how much good may be effected by enlisting the services of the people themselves in the work of supervision. "They (the Municipal Commissioners) look after the Vaccinators' returns so minutely, that they refuse not unfrequently to pay him, till they receive the confirmation." No stipendiary agency that Government could employ would probably be so efficacious.

8. The time has now arrived for considering whether the strength and efficiency of the Vaccination Department, on the success of which the happiness and safety of the great mass of the population so greatly depend, might not be increased by the aid of the recently established "Local Funds," and the Committees through which they are administered. The Superintendent General is requested to place himself in communication, through the Revenue Commissioners, with the several Presidents of Committees, and ascertain how far they are disposed to contribute towards this work. In the opinion of Government the rural Vaccinators should chiefly be paid from this source.

If this principle were adopted, and the Vaccinators for large towns paid for by Municipalities, the entire amount of the imperial expenditure might be devoted to strengthening the staff of Superintendents. Every District or Collectorate might have at least one Assistant Superintendent. In making this suggestion, His Excellency in Council wishes it to be clearly understood that his object is solely to increase the efficiency of the Department, and not to relieve the Imperial Exchequer. It is not, in the opinion of Government, just, after the people have responded to the calls that have been made towards local taxation, for the State to withdraw the aid it had previously given. So far from voluntary efforts on the part of the people affording grounds for the diminution of State aid, they furnish the strongest argument for increasing such aid.

9. The suggestions for having recourse to legislation for the suppression of Inoculation, and for making Vaccination compulsory within the limits of the Town and Island of Bombay, have been and are engaging the attention of Government.

10. His Excellency in Council has much pleasure in expressing his approval of the manner in which Dr. Pinkerton and the Officers under him have conducted their several duties. The Department is necessarily dependent on the co-operation of the Officers employed in the general administration of the country, and Government have learnt with satisfaction the marked assistance rendered by Colonel Schneider at Sawunt Warree, and Mr. Dhunjeebhoy Cowasjee, the Deputy Collector of Sattara. The recent death of Doctor Ffolliott, who had shown himself a most zealous Officer, is to be greatly lamented.

(Signed) F. R. S. WYLLIE,
For Chief Secretary to Government.

To

The Inspector General, Indian Medical Department,
The Superintendent General of Vaccination,
The Revenue Commissioner, N. D.,
The Revenue Commissioner, S. D.,
The Commissioner in Sind,
All Collectors, and the First Assistant Collector in charge Punch Mahals,
The Political Department of the Secretariat,
The Public Works Department of the Secretariat,
The Accountant General.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1869-70.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOC

Bombay:
PRINTED FOR GOVERNMENT AT THE
EDUCATION SOCIETY'S PRESS, BYCULLA.

1870.

No. 2071 of 1870.

From The INSPECTOR GENERAL,

Indian Medical Department.

To The SECRETARY to GOVERNMENT,

General Department.

Bombay, 27th July 1870.

Sir,—I have the honour to forward the Annual Report on Vaccination throughout the Bombay Presidency and Sind for the year 1869-70, by the Superintendent General of Vaccination.

2. It will be observed that the work of the Department is steadily progressing, there being a small increase over the last year of 32,483, the total number vaccinated being nearly half a million (464,667).

3. There was no change in the strength of the Government Itinerant Establishment, and I observe in paragraph 4 some exception is taken to the decision upon the case of the Nassick Vaccinator and Peon. On the general question as to whether Station Vaccinators should be paid by Government or by Local Funds, it seemed to me highly expedient to carry out the views of Government on this point; and I thought, moreover, the principle should be carried out wherever practicable, and that Government "ought to be relieved of the expenditure on account of vaccination in all towns capable of maintaining their own Vaccinators," as noticed in paragraph 5. This has been sanctioned by Government in Resolution No. 1481, dated 24th June 1870.

4. It will be well, however, to consider the peculiar circumstances of many of the poorer Municipal towns, which alone may not be able to bear the additional burden of a Vaccinator and Peon. I would suggest whether it might not frequently be possible to bracket two such towns together, the Vaccinator working 3 or 6 months in each, when the towns are at a reasonable distance from each other.

5. It is difficult to state too earnestly the hope that, in any contemplated changes in a re-organization of this important Establishment, its general efficiency will be maintained. In spite of much scepticism on the subject (scepticism for which the French Capital has for some time past been paying in valuable lives), the Vaccination Establishment is doing a great work in

v-

cting juvenile life in the most direct way; and yet such is the want of rmation and intelligence on the part of the mass of the people on this bject, that were it not for the influence of Government Officers, some of hom, I observe with pleasure, are reported to take much interest in vaccination, it is doubtful whether vaccination would not be dwarfed into inconsiderable dimensions, or even die out altogether.

6. It is a hopeful sign that the number of Vacccinators in Native States is increasing (paragraph 7); and, in reference to the suggestion in paragraph 8, I think that the whole Government Estalishment might be withdrawn from Kattiawar, vaccination being kept up entirely from Local Funds, with the exception of the expense of supervision, which should always be an Imperial charge.

7. In reference to paragraph 9, vaccination is only one of the duties of the Sub-Assistant Surgeon or Medical Subordinate in charge of a Dispensary, and I regret to have to state that in most cases it is discharged with little interest. When the Dispensaries are placed under closer supervision, it is believed that all medical duties will be performed with much greater efficiency than at present.

8. Paragraph 10, at its close, states that Superintendents "control and direct, but they cannot exercise a close supervision." This is true, and very much to be lamented. But I conceive that something more may yet be done in the increased activity of Superintendents, and still more by the appointment of Native Assistant Superintendents, as advocated in paragraph 11. But I think, speaking generally, that the whole Department would lose something of the confidence at present extended to it, if the element of European supervision were to be withdrawn. I would beg to state that past experience proved that the withdrawal, or rather diminution, of European superintendence led to very unsatisfactory results, so much so as to necessitate a re-organization of the Department so as to replace the European Officers as far as possible. The plan of employing graduates of the Grant Medical College as Deputy Superintendents was also tried, but proved useless, and had consequently to be abandoned.

9. On this point, it is important to draw the attention of Government to the anomalous character of the two appointments pointed out in paragraph 11 by the Superintendent General of Vaccination.

1. { Civil Surgeon, Rajkote.
   { Superintendent of Vaccination, Kattiawar.

2. { Charge of Bheel Corps.
   { Superintendent of Vaccination, Rewa Kanta.

I quite concur in the opinion of the Superintendent General of Vaccination that Superintendents should have only vaccination duties to attend to. I would suggest, however, that Dr. Pinkerton should be desired to bring forward the subject separately.

10. Paragraph 16 contains a simple and easy method of registration of vaccination in villages.

11. I regret to see that the lymph in use was so frequently "bad," and hope that the active means advocated by the Superintendent General will ensure an improvement in this respect during the next year. It is the one fault which admits of no excuse, and damages the character of work which may have been very good, but which is obliged to be taken on trust, from the inability of Superintendents to inspect all work or the whole of their respective Circles in one working season.

12. Inoculation appears to be falling out of popular practice, but it is much to be feared that it will not be abolished from the faith of the people so long as small-pox continues to be so prevalent and so fatal a disease. Much must remain to be done by the Superintendent General, when he reports (paragraph 23) that of 21,943 cases of small-pox, 93·5 per centum were "unprotected." I would ask, How is it possible that any population in the Presidency can have 93 per cent. of its number unvaccinated? It would have been interesting if further particulars of the means adopted to protect the people of the two Talookas specially named were stated. The whole of the figures in the earlier portion of this paragraph are untrustworthy. The small difference of the death-rate of the protected and unprotected is contrary to all experience.

13. I think it must be accepted as being creditable to the Department that so few instances of a want of truthfulness in Vaccination Returns have come to light (paragraph 24), and that (paragraph 25) the conduct of the Vaccinators has been generally well spoken of.

14. The percentage of success (paragraph 27) is doubtless in reality less than 96·2. There are so many influences which tend to destroy the perfectness of a vaccine vesicle on which success depends, even when the Vaccinator's work has been as good as possible.

15. I think there can be no doubt that the Establishment has worked well during the year under report, and I would beg to support the Superintendent General's notice of the good work of individual Officers.

16. I should be glad if Government would sanction the recommendation in the concluding portion of paragraph 36, the Weekly Returns being of much importance.

17. Upon the great question as to whether Syphilis can be communicated by vaccination, no negative evidence can be of use. It must be settled by direct experiment. The only practical use of the inquiry so far, is to make it certain that no mischief can be communicated if only pure lymph be used; and this is of great importance.

18. I observe in paragraph 38 that mention is made of the result of an inspection of some schools at Vingorla. In three schools 18 unprotected children were found. Although this subject has been frequently mooted before, and has been unfavourably decided upon, I cannot help recording my strong opinion, that no child should be admitted to a Government school unless actually protected by vaccination, or at least, with the permission of the guardians, that the child should be vaccinated on the first convenient opportunity.

19. In conclusion, I would express a hope that Government will see in this Report evidence of good work in the Vaccination Department, and of the intelligence, zeal, and activity of the Superintendent General of Vaccination.

I have the honour to be,

Sir,

Your most obedient Servant,

W. THOM,

For Inspector General, Indian Medical Department.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND,

FOR THE YEAR 1869-70.

This is the Second Annual Report of the Superintendent General of Vaccination. It embraces a period of fifteen months, viz. from 1st January 1869 to 31st March 1870, but the returns for the first three months of 1869 are shown separately, so that the returns for 1869-70 can be compared with those of 1868. Until the year 1855 the annual returns and reports of vaccination were made for the official year, but they were thereafter rendered according to the calendar year; and now, the Government of India in their Resolution No. 5304, dated 9th December 1869, have directed that all reports and returns shall be for the official year. In order to comply with the Resolution, I did not submit a report or returns for the calendar year 1869, but have made out a return showing the vaccinations performed between the 1st January and 31st March 1869 in the old forms, and the returns for the official year 1869-70—*i. e.*, from 1st April 1869 to 31st March 1870—are drawn up in the new forms which the Government of India, in the above-mentioned Resolution, directed to be brought into use for and from the year commencing 1st April 1870. But I have considered it advisable to show the returns for 1869-70 in the new forms, so as to have them more perfect by next year. There are some columns of the new forms blank: for instance, the columns under "Re-vaccination" are all blank, because re-vaccination had not been introduced; but instructions have been issued to the Vaccinators to re-vaccinate all who are willing to be re-vaccinated, and arrangements have been made for using the new forms henceforth.

Change of the year for report from the calendar to the official year.

2. The Report consists of—*first*, a statement of the general working of the Vaccination Department; *second*, extracts from the Reports of the Superintendents of Vaccination, Civil Surgeons, and others holding independent Medical charges;

Divisions of the Report.

and, *third*, the tables of figures showing the results, &c. for the 1st quarter of 1869 in the old forms, and a new set of forms showing the results, &c. for 1869-70 under two grand divisions—**A**, Vaccine Department or Peregrinating Establishments, and **B**, Dispensary Vaccination or Stationary Establishments. In addition to these, I have added a table showing the vaccinations among European and Native troops, Cantonment bazars, &c. There are also tables in which the monthly employment returns of the Superintendents are summarized.

Government Peregrinating Establishment.

3. The strength and constitution of the Government Peregrinating Vaccination Establishment is the same as was stated in last report, with the exception of the addition of 14 extra Peons on Rs. 6 per mensem each, being two to each Circle Superintendent, except the Superintendent of the Presidency Circle. The sanction of the Government of India to this increase of Peons was made known by this Government's Resolution No. 572, dated 6th March 1869.

Government Station Vaccinators.

4. The Government of India, in Memorandum No. 2849, dated 21st June 1869, made known in this Government's Resolution No. 1569, dated 2nd July 1869, expressed an opinion that Station Vaccinators "are fairly chargeable to the towns for which they are kept up;" and I was called on for a report on the subject, and gave my opinion that the stations should maintain their own Vaccinators, and suggested that the Government Vaccinators at Poona, Ahmednuggur, Sholapoor, Nassick, and Belgaum might at once be transferred to the Superintendents of Circles for duty in the districts, as each of these towns has one Municipal Vaccinator, except Poona, which has two, as well as a Military Station Vaccinator; and I further stated that I was of opinion that the Municipalities of Sattara, Dhoolia, Dharwar, Rutnagherry, Kaira, Surat, Broach, Kurrachee, Hydrabad, and Shikarpoor, were each able to maintain a Vaccinator; and with regard to the Karwar Station Vaccinator, I thought he as well as the others might be handed over for work in the districts, because the town contains too few people to keep a Vaccinator always employed. My views on the whole subject were laid before Government in letter No. 2731, dated 30th July last, from the Inspector General, Indian Medical Department, to the Secretary to Government, General Department. As far as I know, Nassick only has taken upon itself (from 19th November last) to maintain a single Vaccinator (*vide* this Government's Resolution No. 3024, dated 21st December last). The Civil Surgeon of Dhoolia in his report states that the Municipality of that town has sanctioned the amount necessary to maintain its own Vaccinator from the beginning of the

official year 1870-71. It was my wish, as stated in the 4th paragraph of letter No. 579, dated 27th July last, to the Inspector General, Indian Medical Department, that, on these stations agreeing to maintain a Vaccinator of their own, the Government Vaccinators should be transferred for duty in the districts under Superintendents of Vaccination, because there are in nearly all Circles too few Vaccinators; but the Inspector General, Indian Medical Department, was pleased in his letter No. 4520, dated 16th December last, to state, in reference to the Nassick Vaccinator, "that the saving effected by the transfer of the vaccinating duties at Nassick to the Municipality should lapse absolutely to Government, and the services of the Vaccinator and Peon cannot therefore be made available for any other purpose." I regret this, for the reason above given, and also because, if all station vaccination expenditure be thus treated, it will reduce the grant for vaccination by Rs. 3,500 annually, which might be very useful in case of a reorganization of the Department, as there is every reason to suppose that the Government of India will not sanction more than the present expenditure for any kind of reorganization.

Municipal Vaccinators.

5. There has been an increase in the number of Vaccinators maintained by Municipalities, and there is every probability that the number will be still further increased, and Government relieved of the expenditure on account of vaccination in all towns capable of maintaining their own Vaccinator. The following is a list of the towns which maintain Vaccinators out of Municipal funds:—

Circle.	Name of Town.	Name of Collectorate.	Number of Vaccinators.	
			1869-70.	1868.
CENTRAL	1. Poona	Poona	2	2
	2. Joonere	Do.	1	..
	3. Indapoor	Do.	1	1
	4. Ahmednuggur	Ahmednuggur	1	1
	5. Sholapoor	Sholapoor	1	1
	6. Barsee	Do.	1	1
	7. Punderpoor	Do.	1	1
	8. Sangola	Do.	1	1
	9 Kulladghee	Kulladghee	1	1
	10. Bagulkote	Do.	1	1
	11. Beejapoor	Do.	1	1
	12. Nassick	Nassick	1	1
	13. Barramuttee	Kulladghee	1	1
		Total	14	13

Circle.	Name of Town.	Name of Collectorate.	Number of Vaccinators.	
			1869-70.	1868.
SOUTHERN ..	1. Khanapoor		1	1
	2. Moon.....		1	1
	3. Kurrar		1	1
	4. Walwa		1	1
	5. Koregaon		1	1
	6. Malseerus		1	1
	7. Belgaum		1	1
	8. Hooblee.....		1	1
	9. Gudduck and Betteghurry		1	1
	10. Khatow.....		1	..
	11. Uthnee		1	..
	12. Sircy		1	..
		Total....	12	9
NORTHERN ..	1. Ahmedabad	Ahmedabad	2	2
	2. Veerungaum.....	Do.	1	1
	3. Dholka	Kaira	1	1
		Total....	4	4
SIND.....	1. Kotree	Kurrachee	1	1
		Total....	1	1
WESTERN ..	1. Tanna	Tanna	1	1
	2. Panwell.....	Colaba	1	1
	3. Oorun	Do.	1	1
		Total....	3	3
		Grand Total..	34	30

It appears that there is an increase in the Southern Circle of three, and in the Central Circle of one Municipal Vaccinator. I think all towns of 20,000 inhabitants should maintain a Vaccinator, and that he should vaccinate in all villages within a radius of three or four miles of the Municipal town. Superintendents should endeavour to persuade Municipalities to maintain their own Vaccinators, wherever it seems advisable that they should do so.

Local Fund Vaccinators.

6. During the past year three Local Fund Vaccinators were appointed in the collectorate of Poona, and six in Dharwar. Tanna, Colaba and Rutnagherry Collectorates have provided for several in their budgets for 1870-71. The institution of Local Fund Vaccinators first took place in Sind; they have been at work now for several years there, and have proved of great use in aiding the weak Government establishment.

Native States' Vaccinators.

7. The number of Vaccinators paid by Native States has also been increased. In the Kattiawar Circle three have been appointed by the Thakore of Bhownuggur, and one by the Thakore of Mallia. In the Northern Circle one was appointed by the State of Dhurrumpoor. In the Rewa Kanta Circle the Rajah of Loonawarra (who formerly maintained one in conjunction with the Nawab of Balasinore) maintains two, and the Nawab one; a second one has been maintained out of the Barria tribute, and one has been appointed for the Sunkeria Mewas,—thus making an increase of four. There was a total increase of nine.

Native Assistant Superintendents.

8. Dr. Butler is of opinion that there is a tendency in Kattiawar Circle to have too many Vaccinators; this should be guarded against; and he thinks that the "number employed by the Chiefs is sufficient to do the whole work in Kattiawar, and the Government Vaccinators, with the exception of two (who might be retained for the purpose of being sent at a moment's notice to any place where small-pox may break out) should be removed." I beg to recommend that this suggestion be adopted, and that the two whom Dr. Butler wishes to remain should be the two best men of his Circle, and that they be made Native Assistant Superintendents. At present there are eight Vaccinators in the Kattiawar Circle, one of whom is used as a Writer in the office of the Superintendent; the cost to Government is Rs. 142 per mensem. I would beg to propose that this sum be expended as follows:—

2 Native Assistant Superintendents, at Rs. 50 each per mensem..	Rs.	100
2 Peons for ditto ditto at Rs. 7 each ditto ...	„	14
1 Writer for Superintendent's Office, per mensem.....	„	28
	Rs.	142

But perhaps it will be better that this stand over until I receive the answers of the Revenue Commissioners to my recommendation, that the payment of all Vaccinators should be from Local Funds, and that Native Superintendents in all Circles should be paid from the Imperial Funds thus

set free. In the Sind Circle two of the Government Vaccinators have for several years back been employed as Native Assistant Superintendents with very great advantage. Their Government pay is supplemented by an addition from the Local Fund grant.

Dispensary Vaccination.

9. In Circular No. 2990, dated 27th August 1868, the Inspector General, Indian Medical Department, at my suggestion, issued instructions to Medical Subordinates and others in charge of Dispensaries to carry on vaccination as an important part of their duty. I have much pleasure in stating that they have in many instances responded well thereto, but in others the number of operations is very small indeed. It would appear that, as a rule, we need not expect people to come to the Dispensaries to ask for vaccination, and nothing short of carrying the means of vaccination to their doors will induce the masses to accept it. So long as this is the case the number of operations at Dispensaries must be small. Wherever there is a Municipal Vaccinator in a town having a Dispensary, I think it would be well for the Vaccinator to vaccinate one day a week at the Dispensary, and two days he should vaccinate in the streets, taking street by street. In cases where there are no Municipal Vaccinator, I think a Medical pupil should be attached to the Dispensary, and he should carry on vaccination in the same manner as a Municipal Vaccinator. A town having a Dispensary or Municipal Vaccinator should not be vaccinated by a rural Vaccinator, except in cases of emergency. Again, in small towns having a Dispensary, it would be well only to vaccinate during the cold season, because the number of children is too few to enable the Medical Subordinate to have a sufficient number of subjects all the year round to insure his always being able to select a good vaccinfer.

Payment of peregrinating Vaccinators from Local Funds instead of from Imperial Funds.

10. In the 8th paragraph of Government Resolution No. 1939, dated 13th August 1869, I was directed to place myself in communication, through the Revenue Commissioners, with the several Presidents of Committees, and ascertain how far they are disposed to pay the rural Vaccinators out of Local Funds; and Government stated if the Imperial expenditure on their account could be set free, it might be devoted to strengthening the staff of Superintendents. Before asking the question, I considered it advisable first to endeavour to obtain an idea of how many Vaccinators are necessary for each collectorate. I therefore asked the Revenue Commissioners to favour me with statements showing the number of talookas, the area, and population of each collectorate. Having obtained this information, I calculated that we should require about forty more Vaccinators in the Southern Division, and

about twenty more in the Northern Division, than there are at present, if the wish of Government, to have one in each talooka, were carried out. I have submitted a scheme to the Revenue Commissioners of the Northern and Southern Divisions, and as soon as I receive their answers I will send up my report to Government on the subject; but I may briefly state that the scheme consists in having one Vaccinator for each talooka, to be paid from local instead of imperial revenue, and the money so set free to be expended in payment of Native Assistant Superintendents, who will aid the European Superintendents. At present our Superintendents cannot exercise any real practical supervision over the Vaccinators on account of the great size of their Circles. They control and direct, but they cannot exercise a close supervision.

Native Assistant Superintendents.

11. There is not the least doubt but that we ought to have Native Assistant Superintendents to assist the European Superintendents. It may be a question whether it would not be better to have Native graduates of Medicine as Superintendents, and no European Medical Officers. The Honourable Mr. Chapman has given a good deal of attention to this subject, and he seems to think that there should be a Sub-Assistant Surgeon, or a qualified Native Medical man, as Superintendent in each collectorate. I at once allow that such an arrangement would be better than our present method, of having a Commissioned Medical Officer superintending very large areas, over which he cannot keep a close supervision; but on making a rough calculation I found that to do so the cost would be about six times more than at present. My own views were, therefore, modified by the consideration of expense; and I came to the conclusion that the European Superintendents should remain as at present, and that the money set free, by the Local Fund Committees taking upon themselves to pay the rural Vaccinators, should be employed to pay Native Assistant Superintendents, who should be chosen from among the Vaccinators themselves. The advantages of this are, that the prospect of promotion to the grade of Native Assistant Superintendent would stimulate Vaccinators to work well, and induce good men to seek employment in the Department. At present we have only four Commissioned Medical Officers, who are full-timed Superintendents of Vaccination, namely:—

Assistant Surgeon	Gordon	in the Central Circle.
Ditto	Raby	ditto Southern Circle.
Ditto	Blanc	ditto Western Circle.
Ditto	Williams	ditto Sind Circle.

These receive their pay from the Vaccination Department. Surgeon Butler is Superintendent of Vaccination in Kattiawar, for which he draws

Rs. 100 per mensem, but his substantive appointment is the Civil Surgeoncy of Rajkote. This arrangement is not a good one, and I am of opinion that the Superintendent should have no other than vaccination duties to do. However, I am bound to say that Dr. Butler has managed his Circle with great credit; and his knowledge of Kattiawar is so valuable, that I would not propose to disturb the present arrangement so long as he remains in his present position. Again, Assistant Surgeon Welsh is Superintendent of Rewa Kanta Circle, and receives no pay from the Vaccination Department; his pay is passed to him as Medical Officer of the Guzerat Bheel Corps; and recently his appointment was classified among the second class civil stations. The other two Superintendents are both Natives,—one is Dr. Colah, Superintendent of the Northern Circle, who draws, as an Uncovenanted Medical Officer, a pay of Rs. 350, and the other is Mr. Anunta Chandroba, Superintendent of the Presidency Circle, who also draws Rs. 350 per mensem. It thus appears that the abolition of the European superintendence would only save the pay of four Officers, and Rs. 100 per mensem of a fifth. To substitute Native Medical men, at the rate of one for each collectorate, or even for every two collectorates, would cost three times more in the latter case, and six times more in the former, than at present. However, if Government are willing to meet the increased expenditure, I think the superintendence would be closer and, practically, of more value. There is one general advantage in having Commissioned Medical Officers as Superintendents, and it is that they are available for Military duty in time of war or any emergency: but this is no advantage to vaccination. In conclusion, I will add again that the present superintendence is very inadequate and that it ought to be increased, and I trust we will be able to increase it by aid from Local Funds. I cannot speak more definitely until I get the answers from the Revenue Commissioners regarding the willingness or unwillingness of Local Funds' Committees to take upon themselves the pay of the rural Vaccinators. I have not yet brought this subject before the Commissioner in Sind, because there are thirteen Vaccinators paid by Local Funds, and two Assistant Superintendents paid in part by Local Funds and in part by Government, already in Sind.

Refusal of the Government of India to grant travelling batta to Vaccinators, and the suggestion to give batta for all successful vaccinations above a fixed number.

12. I mentioned in the third part of the 13th paragraph of my last Report, that it had been recommended to grant travelling batta to all itinerant Vaccinators. This subject was brought before the Government of India (*vide* Resolution No. 16, dated 26th January last), and refused in their letter No. 3157, dated 9th July last; but it was added, that "it might be possible to

devise a scheme for paying batta to Vaccinators for all successful vaccinations over and above a fixed number,—a plan which would encourage zeal and energy." I reported on this suggestion in my letter No. 803, dated 9th August last, to the Inspector General, Indian Medical Department, as follows:—

> "2. I beg to submit that I am of opinion that it would not be advisable to pay batta to Vaccinators for all successful vaccinations above a fixed number. I consider that such a scheme would be impracticable,—1*st*. Because all vaccinations cannot be inspected by Superintendents; therefore the Vaccinator's returns would require to be accepted as correct. This, I think, would be a strong incentive to falsify the registers. 2*nd*. It would be very difficult to fix a number above which the batta should be paid, because, from our little knowledge of the population per square mile, one Vaccinator might find it easy to vaccinate more than the limited number, and another might find it impossible to do so; and yet the latter man might be the more worthy of the two, and might have worked the harder of the two. 3*rd*. This plan was tried by Dr. Beatty some years ago, when he was a Superintendent of Vaccination, and it failed."

I have no wish to press the matter of travelling batta to Vaccinators again on Government, as it is very probable that Government will shortly be relieved of all charge on account of Vaccinators by their being maintained by Local Funds, Municipalities, Native States, &c; but I will add that our Vaccinators, as a rule, require no inducement to do plenty of work, and I fear that many of them do too many vaccinations. What we most want is quality and not quantity. When there shall be a Vaccinator to each talooka, then it might be useful to hold out a stimulous to exertion and zeal; at present it is not necessary, for nearly every Vaccinator can get plenty of children to vaccinate, and the labour is not so much in vaccinating them, but in collecting and selecting children, seeing them again on the eighth day, persuading the parents to give a vaccinifer, recording names and results.

Reduction of the travelling allowance of Superintendents from Rs. 8 to Rs. 5 per diem.

13. My budget estimate for 1869-70 was reduced by Rs. 10,000, and as there remained too little to meet the past year's expenditure, it was suggested in the Government of India's letter No. 1836, dated 8th July last, made known in this Government's Resolution No. 1699 dated 20th idem, to reduce the travelling allowance of the Superintendents from Rs. 8 to Rs. 5 per diem. This was done, and I regret to say that all the

Superintendents have complained, and state that Rs. 5 per diem are not sufficient to cover their expenses. I selected Dr. Butler, Superintendent of Vaccination in Kattiawar Circle's letter for submission to Government; and I briefly stated in my endorsement No. 1103, dated 4th March last, that "I can say, from my own knowledge, that Rs. 5 per diem for our Superintendents will not cover all the expenses of travelling," &c.; and pointed out to Government that our Superintendents get no other kind of allowance, such as tentage, office allowance, nor are they supplied with tents. This Government in their Resolution No. 756, dated 29th March, again recommended that the former rate of travelling allowance be granted.

Certificates of Vaccination from candidates for Government employ.

14. In Resolution No. 1138, dated 12th May 1869, Government made known that they were not prepared to adopt the rule that a certificate of successful vaccination, when there is no evidence of protection by small-pox (or insusceptibility), be exacted from all candidates for Government employ. I will not urge a reconsideration of this, but I may mention that the recruits of the Bombay Native Army have for many years past been vaccinated, when not otherwise protected; and it is worth mentioning that there have only been fifteen deaths from small-pox among the Sepoys in the last ten years. I have never heard of recruits on this side of India objecting to be vaccinated. They quietly submit to it, as a necessary preliminary to their enlistment. Again, the employés of the Telegraph Department suffered so severely from small-pox, that it was directed in Circular No. 1897 of 1868-69, dated 20th March 1869, from the Superintendent, Sub-Bombay Division, to the Assistant Superintendent in charge Bombay Office, that all employés in the Telegraph Department be vaccinated when it does not interfere with caste prejudices: and they were vaccinated or re-vaccinated without a murmur, as far as I know.

Superintendence of Dispensaries.

15. Mr. Grey, Collector of Belgaum, made a suggestion early in 1869, that Superintendents of Vaccination might, when on tour, inspect Dispensaries. The suggestion was referred to me for opinion by the Inspector General, Indian Medical Department, in his letter No. 1090, dated 12th April 1869. I stated in my answer thereto, No. 284, dated 19th idem, that Superintendents have time enough to inspect Dispensaries without detriment to their vaccination duties, and that, in point of fact, they do now inspect the vaccination work at Dispensaries. At the same time I stated

that I was not so clear about making them controlling and directing Officers of Dispensaries, because that would make them responsible Officers; and it is impossible to say how much work would be required to bring the Dispensaries into good working order, and to keep them so. As inspecting Officers only, Superintendents might write in a book in each Dispensary when on tour their remarks on—*1st*. The general character of the Medical Subordinates or others in charge. *2nd*. The method of carrying on work at Dispensaries, and any suggestions for improving it. *3rd*. The state of the building—(*a*) site, good or bad, with reasons for opinion; (*b*) capacity, whether sufficient for the requirements of the place, &c.; (*c*) cleanliness; and (*d*) ventilation, where there are wards in the Dispensary. *4th*. State of medicine, instruments, and records. *5th*. Any other subjects worth noting. The remarks so written to be copied and forwarded by the Medical Subordinates or others in charge of Dispensaries to the Deputy Inspector General of Hospitals of the Division, and to the Collector of the District.

Vaccination Registers to be kept in all Villages.

16. I think the best method of registering vaccinations in villages is that adopted in Scotland. It is done by simply writing in the birth register, under the child's name, the words "successfully vaccinated," "insusceptible," or "postponed." I would beg to suggest that village registrars of births be directed to enter under each child's name the words "successfully vaccinated," or "unsucessfully vaccinated," as the case may be. I think for the present anything more elaborate would very likely be less correct than this simple method of registering vaccinations in villages.

Superintendence.

17. I am very happy to say that there was very little interruption in the superintendence during the period under report.

Dr. Gordon	held charge in the	Central	Circle.
Mr. Raby	ditto	Southern	ditto.
Dr. Colah	ditto	Northern	ditto.
Dr. Butler	ditto	Kattiawar	ditto.
Dr. Welsh	ditto	Rewa Kanta	ditto.
Mr. Anunta Chandroba	ditto	Presidency	ditto.

The only changes which occurred were,—Dr. Williams succeeded the late Dr. Ffolliott in Sind in May 1869, and Dr. Blanc took up his appointment of Superintendent of the Western Circle from Mr. Cody in December 1869.

18. In Table No. VII. I have summarized the monthly employment returns of each Superintendent, and the following is a condensed form of the employment returns of the seven Superintendents for the year 1869-70 :—

Names of Superintendents.	Circles.	Number of Stations visited.	Distance travelled in Miles.	Number of travelling days.	Number of Children inspected.	Number of Villages visited and inspected.	Number of Vaccinators whose work was inspected.
Dr. Gordon	Central.....	84	1,506	183	14,013	314	33
Mr. Raby.....	Southern	78	1,701	129	6,197	190	44
Dr. Colah.....	Northern	42	2,208	167	21,618	324	30
Mr. Cody and Dr. Blanc.....	Western ...	50	1,215	105	7,514	166	19
Dr. Ffolliott and Dr. Williams..	Sind	129	3,164	138	18,696	548	31
Dr. Butler	Kattiawar.....	73	1,294	135	8,133	237	34
Dr. Welsh	Rewa Kanta...	41	680	69	3,873	193	10
Total...	7	497	11,568	926	80,044	1,972	201

From the above it appears that Dr. Gordon travelled most days. Mr. Raby inspected the work of the greatest number of Vaccinators, but his numbers of children and towns inspected are smaller than all, except Dr. Welsh, who is only permitted to travel four months, and is not a full-timed Superintendent. Dr. Colah inspected the greatest number of children, and I can testify to the great care with which he makes his inspections. The numbers in the columns for travelling days, children, villages, and Vaccinators in the Western Circle, are small, and this is owing to there having been a change of Superintendents in the midst of the working season, as well as to there being fewer Vaccinators to examine. Dr. Butler and Dr. Welsh are not full-timed Superintendents, the former having six and the latter four touring months in 1869-70. I must say that the work they both did in their tour is very creditable indeed, and, speaking generally, the table shows that the Superintendents have worked very well, and spared no pains to do as much travelling and inspecting as they could. Dr. Williams has done, I think, the most work; but Drs. Gordon and Colah stand very close to him; indeed I find some difficulty in stating their exact positions. I think Mr. Raby might have inspected more children and more villages, but in some parts of his Circle the population is thin; in other respects his tour is satisfactory.

Lymph.

19. In my letter No. 145, dated 23rd October 1868, when reporting to the Inspector General, Indian Medical Department, what was the best method of getting lymph from England, and the best season to have it sent out, I recommended that lymph should be sent out in capillary tubes only, as points nearly always failed, and that it should be tested lymph; that is to say, it should be kept in England for three weeks, and then one tube of the set charged from each child should be tried, and if it succeeded that it would guarantee the virtue of the rest. It was recommended that fifty tubes of lymph should leave England about the middle of October and December, and that one-half of each should be obtained from the National Vaccine Establishment, London, and the other half from the Central Vaccine Institution for Scotland; and that half of the English and half of the Scotch should be sent in the usual way through the post, and the other half in the Ice-room of the Peninsular and Oriental Company's Steamers.

On the 8th November, a packet of thirteen tubes was received from the Central Vaccine Institution of Scotland.

The following shows their distribution and result of use :—

Issued to	Number of Tubes.	Result.
Central Circle	2	Succeeded.
Western do.	3	Do.
Northern do.	2	Do.
Sind . do.	3	Do.
Presidency do.	2	Failed (?)*
Total.....	12	

* It is not quite certain that there was not a mistake made.

On the 6th December, a packet, containing ten tubes and forty ivory points, were received from the National Vaccine Establishment, London, and the following is the result :—

Issued to	Number of Tubes.	Result.	Number of Points.	Result.
Central Circle.....	.....	.....	5	Failed.
Presidency do.	4	Failed (?) *...	8	Do.
Western do.	.....	.....	5	No report.
Northern do.	.....	.....	5	Failed.
Sind do.	.....	.....	5	Do.
Kattiawar do.	3	Succeeded ...	5	Do.
Rewa Kanta do.	3	Do. ...	5	Do.
Total.....	10		38	

* It is not quite certain that there was not a mistake made.

On the 12th January 1870, I received a packet of ninteen tubes from the National Vaccine Establishment, London, and the following is the result:—

Issued to	Number of Tubes.	Result.
Central Circle	3	Succeeded.
Presidency do.	3	Do.
Southern do.	3	Do.
Western do.	3	Do.
Northern do.	3	Do.
Kattiawar do.	3	Do.
Total.....	18	

On the 18th January thirteen tubes were received from the Central Vaccine Institution for Scotland, and the result is—

Issued to	Number of Tubes.	Result.
Presidency Circle.....	4	Succeeded.
Western do.	3	Do.
Northern do.	2	Do.
Sind do.	4	Do.
Total.....	13	

The foregoing tubes came out by post.

On the 24th January 1870 I received a case (No. 1) containing thirteen tubes from the Central Vaccine Institution of Scotland, which came out in the Ice-room of the Mail Steamer. The whole were used by Dr. Colah in my presence, in Neriad, on six children: one child had five good vesicles, another four; two others had two small vesicles, and two failed.

On the 5th February I received a case (No. 2), containing twenty tubes, from the National Vaccine Establishment, London, which also came out in the Ice-room of the Mail Steamer. The whole were sent to Dr. Butler. Six children were vaccinated by himself from six tubes, all successfully; fourteen tubes were distributed in two's to seven Vaccinators, from which fourteen children were vaccinated,—two failed, two had bad vesicles, and ten succeeded.

On the 5th February I received a case (No. 3), containing twelve tubes, from the Central Vaccine Institution of Scotland, which also came out in the Ice-room of the Mail Steamer. These tubes were used by the Superintendent of the Central Circle, and proved successful in every instance except one.

It appears from the foregoing, that lymph sent out in tubes is infinitely better than on points, for the latter all failed, and the former nearly all "took;" unless the manner of using the points were bad, the conclusion to be drawn is that they are useless. I can hardly think it was the manner of using them which caused their being inert, because their failure was general, not even one exception, and for years back lymph on points generally has failed in all hands. It does not appear that there is any advantage in sending the tubes in the Ice-room of the Mail Steamers, as the lymph which was sent by post was just as successful as it. It further appears that lymph sent out at the commencement and middle of last cold season nearly all proved successful. I would recommend, then, that tested lymph in tubes be sent out by post next cold season, and that it be sent direct to the Superintendent General of Vaccination, Bombay, because when it has to come through several departments it is apt to be delayed. A packet from the National Vaccine Establishment, London, and another from the Central Vaccine Institution of Scotland, should leave Europe about the 1st October and 1st December, and each should contain twenty-five tubes. I consider it useless sending ivory points.

The lymph in general use during 1869-70 was reported well of in the Central, Kattiawar, Southern, Sind, and Rewa Kanta Circles. In the North-

ern and Western Circles several Vaccinators were found working with bad lymph. In the Presidency Circle there was a deficiency of lymph until animal vaccination was begun. When on tour in the Northern Circle I saw some very indifferent lymph. In all cases when lymph deteriorates it is renewed, and Vaccinators should be encouraged to ask for new lymph whenever they have any suspicion of their lymph having degenerated. Any Vaccinator found carrying on work for a length of time with bad lymph should be dismissed the Service, because to thus produce bad vaccination knowingly is inexcusable. The Superintendents of Circles will take care to inform Vaccinators that they must work only with good lymph. In most of the civil stations the lymph was good throughout the year. In Sattara it deteriorated in September, but renewed itself on the subsidence of the rainy season. In Kaira it was renewed several times. When I was in Kaira I saw some very indifferent vesicles and vaccine marks, which, I believe, were more owing to the carelessness and want of skill on the part of the Vaccinator, than to the state of the lymph. Dr. Wyllie says the vesicles were small, and that the lymph should be renewed. In Larkhana, Rutnagherry, and Kurrachee, it became bad, and was replaced by good lymph.

"Animal Vaccine."

20. When Dr. Blanc returned from Europe he brought with him some cow-pox lymph in tubes and on ivory points from London. He obtained his first supply from M. Warlomont in Belgium, who had obtained his first supply from the natural pox on the cow, and now propagates it by inoculating from one calf to another. Dr. Blanc when on leave practised the same method in London for six months with perfect success, and it was from that stock that he brought his "Animal Vaccine" to India. He expressed to me a wish to establish "animal vaccination" in Bombay. I was delighted to give him every assistance, and I have much pleasure in stating that the first inoculation proved a success. This was in December last. He then instructed Mr. Anunta Chandroba how to inoculate the calf and take the lymph from the vesicles. Ever since then Mr. Anunta Chandroba has carried on animal vaccination, and in his Report he speaks of it being a great boon to Bombay, on account of its being a source of pure lymph, as well as being a method of having abundance of it. He has had some difficulty in getting supplies of heifers, and acknowledges the great assistance afforded him by getting them from the Bombay Municipality for three months free of expense. I would also beg to bring to the notice of Government this ready and willing aid given to the Department by Mr. Crawford and Dr. Hewlett, who have both interested themselves very much in "animal vaccination;"

indeed I may say that had they not done so, it could not have been carried on; and I beg to suggest that Government acknowledge the aid rendered by both these Officers. I cannot speak too highly of Mr. Anunta Chandroba's exertions in overcoming the difficulty attendant on the introduction of "animal vaccination," even though that difficulty was almost confined to the question of obtaining heifers. It appears that the people at once took to "animal vaccination" kindly, and even Bhattias and Bunnyas prefer cow-lymph to human-lymph. I have to record the liberality of Mr. Cowasjee Jehangeer, who generously undertook to defray the expenses of "animal vaccination" for one year, and gave us a grant of Rs. 540 for that purpose. Government thanked "that gentleman for this additional proof of his liberal philanthropy." In Resolution No. 280, dated 2nd February last, it was stated that "His Excellency in Council is satisfied with the results of the experiments already made, and approves of Dr. Blanc's and Mr. Chandroba's exertions in this matter." Dr. Blanc, in the month of February, inoculated a heifer at Tarrapoor, in the Tanna Collectorate, with perfect success, and the people rushed to get their children vaccinated from the cow, showing that no prejudices need be apprehended in the districts any more than in Bombay. The first estimate which was made of the probable cost of "animal vaccination" in Bombay was Rs. 540 per annum; but it was forgotten that the butchers would not be allowed to slaughter the calves used, for some time, thereby increasing the expenditure. Dr. Blanc informs me that in London, Paris, and Brussels, the calves are slaughtered immediately after the lymph is taken from the vesicles, and no expense incurred by keeping them for three or four weeks after the operation. It would now appear that the cost will be very much more than was estimated. Mr. Anunta Chandroba enters very fully into the subject in his Report, and comes to the conclusion that five calves will be required every month, and that, to buy them, each will cost Rs. 15, besides Rs. 7½ for feeding; thus requiring Rs. 112½ per mensem, a large portion of which, however, would be recovered by the sale of the calves. I think this charge should be met by the Municipality. I had the pleasure of speaking to Mr. Crawford lately on the subject, and I have much pleasure in stating that he hopes to be able to supply us with calves; and I have no doubt he will be able to do so at a much cheaper rate than the above.

The method of propagating animal vaccine is very simple. Dr. Blanc, in an article in the *Medical Times and Gazette* of 25th September last, says:—

"It is necessary to insist upon the following fact:—The vaccine lymph "at present used by animal vaccinators in France and Belgium, and by myself, "and by those I have supplied in England, is spontaneous cow-pox taken from

"from cows. This lymph has never passed through the human body, and "has no connexion with the Neapolitan lymph, of whose origin at one time "some doubts were expressed.

"In selecting the calves we propose to inoculate, great care should be "taken to ascertain that the animal is in perfect health and in first-rate "condition. The question of health is not of much importance with reference "to the possibility of the transmission of disease, because, if in any way "'seedy,' the inoculation will partly or completely fail, but with this failure "the link is interrupted; and if no preserved lymph has been kept in reserve, "much inconvenience must necessarily follow. Calves from five or six months' "old should be preferred; too young they sicken, too old they are difficult "to manage. It will necessarily require a much more lengthened series of "inoculations in order to arrive at some precise rules; but, as far as I have "observed, it appears to me that strong calves give a stronger lymph, delicate "calves a weaker lymph; also that in white or light coloured calves the "eruption appears sooner, the vesicles are larger and arrive at maturity a day "earlier than in black or brown calves. In warm and moist weather the "eruption is quicker in its development, in cold weather somewhat later. "From these two observations I would therefore advise that dark calves "should be selected in warm weather, and white or light coloured calves in "cold weather. Male or female calves are alike suitable; the only important "point is to select those whose skin is fine and transparent, and the mammæ "or scrotum full and plump.

"In order to vaccinate the calf, it should first be bound and held firmly "upon a table by a couple of assistants; any strong table will answer the "purpose. Mine is of common dealwood, provided with six iron rings. Two "men seize the calf and place it on the table. The fore-legs are bound "together and then tied to the front rings, the right hind-leg is tied to the "posterior ring on the table, and the left hind-leg is lifted up and fixed by "a rope to a ring placed above. A loose rope is passed over the neck, so as "to keep the head down. The calf thus secured is easily managed. To avoid "dirt, a circular hole is made in the table, to which is adapted a zinc pot, in "which the excreta are received. First of all, the mammæ or scrotum and "the surrounding abdominal region must be very carefully shaved. I dis-"pense with the Continental practice of scraping the poor brutes in order to "excite vascular action; I allow them the luxury of a good lather of soap "and a sharp razor; but after the shaving, the parts are frictioned with a "dry towel.

"To inoculate the calf different plans are followed, either superficial inci-
" sions of about half an inch in length, smaller and deeper incisions, or val-
" vular punctures. Dr. Warlomont prefers the long incision, Dr. Lannoix the
" smaller one. I have tried both, and now generally inoculate by long incisions
" and by valvular punctures, kindly suggested to me by Mr. Marson. The
" long incisions give more lymph, but I believe that it is not quite so active
" as the one obtained by the valvular puncture. I therefore prefer the last for
" vaccinating children, and from the first I collect lymph for inoculating other
" heifers. I make on the mammæ or scrotum, and on the abdomen, from
" one hundred to one hundred and fifty punctures or incisions. I inoculate a
" heifer every eighth day. If at that date I find on the heifer some vesicles
" still transparent, I use them for inoculating the fresh calf. Sometimes none
" are found in that condition ; at other times only a very few ; it is, therefore,
" necessary on the sixth and seventh days always to collect a certain amount
" of lymph for inoculating the next calf, as well as to have a supply on hand
" in case of accident. Although lymph in tubes frequently fails when applied
" to man, it retains for several weeks all its properties when inoculated into
" the bovine race. Care must be taken before filling the tubes to add a drop
" of glycerine to the lymph, otherwise it would adhere so strongly to the
" tubes that it could not be blown out again. I am careful that every incision
" and puncture is well touched with lymph. Between the thighs, and on the
" mammæ themselves, on account of the higher temperature of these parts, the
" vesicles rise sooner, and are also the first to lose their limpidity ; therefore
" I have seldom found any of them fit for use on the eighth day. When the
" weather is warm, in order to have some good vesicles for the eighth day
" (for inoculating the next heifer), I make on the abdomen a certain number
" of punctures with lymph preserved for a month or six weeks ; whether the
" cause lies in the lymph or in the cooler spot, the important fact is that
" usually the vesicles developed under these conditions are a day late. But
" as in man, the individual susceptibility of the calf has also some influence.
" In the majority the eruption is beautiful, all the vesicles following a regular
" course, and yielding an abundance of lymph. In a few rare instances a
" great many of the vesicles are arrested in their development, or are quite
" superficial, almost dry, and early lose their transparency. To inoculate a
" calf carefully it requires about an hour ; as soon as the operation is com-
" pleted, the calf should be removed from the table, made to drink some milk,
" and tied in his stable. A cloth bandage in summer, one of flannel in
" winter, should at once be tied round the abdomen. By this the parts are
" kept warm, the calf is not annoyed by the flies, nor can he lick the inocu-
" lated spots. For this reason also the head-rope should be rather short."

21. I am of opinion that there should be a Vaccinator in each Circle appointed to carry on animal vaccination: the expense of it in the districts would, I think, be small. In order to enable Superintendents to acquire a knowledge of the method of operating, I have recommended that all Superintendents of Vaccination be allowed to come to Bombay on a short visit, to gain a practical knowledge of animal vaccination.*

Inoculation.

22. None of the Superintendents in their report make any mention of inoculation having being practiced in 1869-70, with the exception of the Superintendent in Sind, who says that an instance was reported, but not substantiated on investigation.

Small-pox.

23. In the Central Circle small-pox prevailed more or less in every talooka except one, but it was epidemic in Indee and Shindghi Talookas only. At paragraph 13 of Dr. Gordon's Report he shows the number, deaths, &c., from small-pox in each collectorate of the Central Circle. There were 21,943 cases of the disease in 1869. "Of these, 93·5 per centum were unprotected, and 6·48 had been previously vaccinated. Of the former 12·3 per centum died (a very small death rate), and of the latter 8·9 per centum. Of the 6·48 protected and afterwards affected by small-pox, 1·5 were vaccinated in infancy, and 4·9 in after life; of the former there died 4·2, and of the latter 10·2 per centum. Thus it appears that infantile vaccination is nearly two and a half times a better prophylactic than vaccination in after life. In detail I do not place very much reliance upon these returns, more especially with reference to the number of cases occurring after vaccination. During my tour, I on several occasions tested the correctness of the Returns for 1868. As statements of the total number of cases of small-pox, they are not very far from correct. As to the numbers entered as previously vaccinated I discovered some grievous errors. As instances, I may mention the returns of the villages of Ankola and Wakharrie, in the Nassick Zillah; the returns from the former showed that fifty-eight cases of small-pox had occurred during 1868, and that all of them had been previously vaccinated. Upon careful inquiry I found this to be altogether incorrect, only one child had been previously vaccinated. The same was the case with the return from Wakharrie." In the Southern Circle, Mr. Raby says that he receives no returns of small-pox, but reports have occasionally reached him of its prevalence, and he always sent a Vaccinator to the affected locality as soon as possible. It was rife in parts of Dharwar, Canara, and Belgaum Collectorates. Dr. Blanc, Superintendent of the Western Circle,

* This was sanctioned in Government Resolution No. 1232, dated 26th May 1870.

received returns of small-pox from Tanna and Colaba Collectorates, and he has tabulated them in paragraph 20 of his Report; but he says "evidently no weight can be attached to these returns." The Northern Circle was almost free of small-pox. In the Sind Circle 471 deaths were returned for the year 1869. Only a few cases were reported in the months of January, February, and March 1870, in the Kattiawar Circle. In the Rewa Kanta Circle there were thirty-seven cases in the Punch Mahals, out of which four died. There were more cases in the Native States of this Circle, but no particulars were obtained by Dr. Welsh, the Superintendent. In the Presidency Circle (Island of Bombay) there were 1,725 deaths from small-pox. It appears that, with the exception of the Presidency Circle (Island of Bombay), the Circles have been less affected during 1869 by small-pox than in most previous years. With regard to the Presidency Circle, the registration of small-pox is probably not perfectly correct, but I think it is more so than in any other part of this Presidency, and there is not the least doubt about there having been a severe epidemic and many valuable lives lost in the town of Bombay. As long as Vaccination is not compulsory, an epidemic every three or four years may be predicted, because small-pox is always being imported from the maritime coasts of Asia, and less than half the children born annually are vaccinated, so that there is always a ready field of victims for the disease to lay hold of. This will be all changed if the proposed Vaccination Bill becomes law. Mr. Anunta Chandroba, the Superintendent, says that compulsory vaccination and "animal vaccine" lymph in abundance will put an end to epidemics of small-pox in Bombay.

Small-pox existed, more or less, at the following stations :—

Poona, from January till March 1869.

Sattara, prevailed in early part of year.

Dapoolie, eight cases, all recovered.

Belgaum, twenty-three cases in Military lines, all vaccinated, and all recovered. Disease prevalent in April 1869.

Dhoolia, prevalent in April and May 1869. 14 cases seen, 2 died.

Bhooj, a few cases.

Dharwar, less than last year in districts.

Ahmedabad, prevailed from January to June 1869. 117 deaths. A Small-pox Hospital instituted out of town.

Karwar, nine deaths, not vaccinated.

Gogo, one case in April 1869, recovered.

Kurrachee, in January 1869, fourteen cases; from January to April 1870 sixty-six cases, and the disease still in town.

Truthfulness of Vaccinators' Returns.

24. I regret that an instance of falsification by a Government Vaccinator took place in the Central Circle, and another in the Western Circle. In Kattiawar two instances of falsification by Native States' Vaccinators were discovered. Falsifications have not been many, considering the number of Vaccinators, and I think the returns may be accepted as not very far from the truth—at least as regards the total number of vaccinations. The best means of preventing falsification is for the Superintendents to show the Vaccinators that a false name must be discovered, by calling the names over from the registers when testing the work of each Vaccinator. But some of our Circles, such as the Sind, Central, and Southern, are so large, that the Superintendents cannot visit each Vaccinator every year. I trust that we will soon have some Native Assistant Superintendents in each Circle, and then I feel assured that falsification of records will no longer be a stigma on the Department. Mistakes of all kinds may be excused by circumstances. Falsification should always be punished by dismissal from the Service; there is no excuse for it. I regret that Dr. Butler pardoned a Native State's Vaccinator, in whose records he discovered some false names; the man should have been dismissed.

Conduct of Vaccinators.

25. The conduct of the Vaccinators, with a few exceptions, has been generally well spoken of by all the Superintendents. Some have been found fault with for—first, laziness; second, quarrelsomeness; third, for being absent without leave; fourth, for working with bad lymph, &c. A small fine was generally imposed in the first two cases; pay stopped in the third, as well as loss of service for pension. The instances of the fourth occurred chiefly in the Northern and Western Circle, and some of the men were heavily fined. It would be much better for a Vaccinator to do nothing rather than vaccinate with bad lymph; there is no excuse for it, for with capillary tubes any Vaccinator can be supplied in a few days with good lymph.

Total Vaccinations.

26. I have already said in my first paragraph that this report embraces two periods; the first period is from 1st January to 31st March 1869, and the second period is from the 1st April 1869 to 31st March 1870, or the official year.

During the first period there were vaccinated in—

Civil Life	115,534
In the Army	2,001
Total.....	117,535

During the second period, or official year 1869-70, there were vaccinated in—

Civil Life	457,862
In the Army.....	6,805
Total.....	464,667

There is an increase in civil life of 31,609, and in the Army of 874; total increase in 1869-70, as compared with 1868, is 32,483.

Increase.

27. The vaccinations in civil life are shown in two statements, viz. No. I. and No. V. The former exhibits the work of Government, Municipal, Local Funds, and Native States' Vaccinators (these are itinerant); the latter shows the vaccinations performed at Civil stations (these are stationary). The following shows the success in each of these:—

Success.

1*st*—Government Vaccinators	.....97·2	Average 96·7.
2*nd*—Municipalities ditto	.....95·2	
3*rd*—Native States ditto	.....96·7	
4*th*—Dispensary Vaccination	.....89·6	

The percentage of successful in 1868 was on the grand total in civil life 93·5; this year it is 96·2. This increase of success is only apparent and not real, and is due to the method of calculating it. In former years the percentage of success was calculated on the total, so that the "unknown" were really reckoned as unsuccessful. This year, however, the unknown cases have been deducted from the grand total, and then the percentage of successful calculated. Were the percentage of success calculated the same way as in former years, it would be 93·1, or 0·4 less than last year. I fear it must be acknowledged that the success shown by itinerant Vaccinators is too high. Vaccinators are too apt to consider every case successful, even if there be only abortive vesicles produced. Superintendents of Vaccination, Civil Surgeons, and others holding independent Medical charges, should instruct Vaccinators, that, unless there be at least one perfect vesicle, which has run its course regularly, there cannot be a certainty of success; two, three, or four imperfect vesicles cannot be considered equal to one good vesicle. It appears that some of the returns show a greater total than the

actual number of persons vaccinated. Thus *A B* vaccinates fifty persons in May, and returns them thus—twenty successful, twenty unsuccessful or doubtful, and ten unknown. In June he vaccinates one hundred persons, twenty of whom were the twenty unsuccessful in May. He thus returns one hundred and fifty persons vaccinated, when, in point of fact, there were only one hundred and thirty persons operated on. Such a method of reckoning is clearly wrong, and it may be avoided in this way:—*A B* vaccinates in May fifty persons as above; he should return them thus—twenty successful and ten unknown, total thirty; and a remark may be added that twenty will be vaccinated again and the result included in next month. Every unsuccessful case should be vaccinated at least twice before the result is reported.

Sex.

28. In civil life there were 245,508 males and 212,354 females vaccinated, or 53·6 of the former to 46·4 of the latter. In 1868 the disparity was much greater. It is probable that the excess of males is still considerably more than in the general population. Superintendents are now testing the columns of sexes, and I have no doubt we will get them more correct year after year.

Caste.

29. Of the different castes the following shows the percentage of each:—Christians, 0·5; Hindoos, 74·4; Mussulmans, 19·1; Parsees, 0·2; and other castes, 5·5. There are some slight differences in these percentages from those in last report, but they are hardly worth noticing in particular.

Age.

30. There were 191,221 under, and 266,641 above, one year old vaccinated in 1869-70, or 41·8 per cent. of the former to 58·2 of the latter. This is nearly the same as in the two former reports. Until the number of Vaccinators be increased considerably we will not be able to obtain a much greater proportion under one year old. The proportion of infantile vaccination is highest in the Northern Circle, in which there is a Vaccinator for each talooka; no other Circle has a Vaccinator for each talooka, and in no other Circle is the number of infantile vaccination so high. There were 64,488 under one year to 35,393 above one year old in the Northern Circle.

Causes of increase and decrease in Circles.

31. Compared with 1868 there has been an increase of vaccinations in all establishments as a whole, but there has been a decrease in some of the establishments of Circles. The following figures show where the increase and decrease occurred:—

(*a*)—Government Establishment in—

	Increase.	Decrease.
1*st*—Central Circle.....	3,003	.....
2*nd*—Southern do.	4,537	.....
3*rd*—Western do.	3,562	.....
4*th*—Northern do.	.....	930
5*th*—Sind do.	.....	680
6*th*—Kattiawar do.	.....	483
7*th*—Rewa Kanta do.	1,969	.....
8*th*—Presidency do.	.....	1,535
	13,071	3,628
Deduct—Decrease.....	3,628	
Increase.....	9,443	

(*b*)—Municipal Establishment in—

Central Circle	2,022	.....
Southern do.	.....	95
Western do.	758	.....
Northern do.	652	.....
Sind do.	.....	366
	3,432	461
Deduct—Decrease.....	461	
Increase.....	2,971	

(*c*)—Native States Establishment in—

Central Circle	1,033	.....
Southern do.....	2,172	.....
Western do.....	2,640	.....
Northern do.....	.....	346
Sind do.....	.....	845
Kattiawar do.....	5,916	.....
Rewa Kanta do.....	3,083	.....
	14,844	1,191
Deduct—Decrease.....	1,191	
Increase.....	13,653	

(*d*)—Local Funds Establishment in—

	Increase.	Decrease.
Central Circle	1,902	.....
Southern do.	3,843	.....
Sind do.	.....	631
	5,745	631
Deduct—Decrease.....	631	
Increase.....	5,114	

The causes of increase are given as follows :—Dr. Gordon, in the Central Circle, attributes it to—first, increased and continuous supervision; second, increase of pay to Vaccinators; third, to the distribution of *zahirnamas* to villages; and, fourth, calling over the names of the unprotected in villages. There has been an increase of Vaccinators in the Central, Southern, Western, Northern, Kattiawar, and Rewa Kanta Circles, which is the chief cause of increase in these Circles. In the Northern Circle there was one Government Vaccinator less, and one Native States' Vaccinator more. In the Kattiawar Circle the increase is due to the increase of Natives States' Vaccinators. The decrease in the Presidency Circle is attributed to the prevalence of measles and fever. I think the increase in the Western Circle is due to increase of pay and better supervision. In the Rewa Kanta, Dr. Welsh attributes the increase to—first, increased aid from village officials; second, greater activity on the part of the Vaccinators; third, increased number of Vaccinators; and, fourth, less opposition on the part of the people. I think a good deal is also due to the efforts of Dr. Welsh himself. In Sind the cause of decrease is attributed to the reduction of one Local Fund Vaccinator, presence of cholera, and it being probable that the establishment could not vaccinate more. In general terms, it may be stated the causes of increase are—first, increased number of Municipal, Local, and Native States' Vaccinators; second, increased pay, producing more activity among the Vaccinators; and, third, less opposition on the part of the people.

Cost.

32. The following figures show the cost of each establishment and the cost of each successful vaccination. It should be borne in mind that the Government Establishment is debited with the entire administration charges :—

		Total cost.	Cost of each successful Vaccination.
1.	Government .....Rs.	1,00,798	Rs. 0 6 8
2.	Municipal ..... „	6,694	„ 0 5 3
3.	Local Fund ..... „	7,344	„ 0 4 2
4.	Native States ..... „	21,365	„ 0 5 6
	Rs.	1,36,201	Rs. 0 5 6

In 1868 the estimated total expenditure was Rs. 1,11,524, and the average cost of each vaccination was four annas and two pies. The increase of the total is owing to—first, increased pay to Vaccinators; and, second, an increase in the number of Municipal, Local, and Native States' Vaccinators. The cost of each vaccination in 1869-70 was four annas and nine pies, or seven pies more than in 1868; but, as shown above, the cost of each successful case was five annas and six pies, or eightpence three farthings English money. This I consider very cheap indeed. Notwithstanding the whole charges for superintendence and administration are charged to the Government establishment, yet the cost of each successful vaccination by it is very little more than in the other establishments. This is very creditable to the Government Vaccinators.

Assistance from Civil Authorities.

33. I have much pleasure in being able to state that the Superintendents have unanimously acknowledged the aid which they and the Vaccinators have received from the Revenue and Political Officers. In the Central Circle, Dr. Gordon says:—" It is mainly through the interest taken by these Officers in vaccination that matters go on so smoothly. Mr. Raby states that Colonel Anderson has obtained for the Kolapore State Vaccinators about the same rates of pay as the Government Vaccinators get. In the Southern Circle Mr. Robertson has appointed six Vaccinators in the Dharwar Collectorate to aid the Government establishment, and he takes great interest in vaccination. Dr. Blanc, in the Western Circle, warmly acknowledges the assistance he has received from the Civil Authorities. In Sind, Dr. Williams brings to notice the great assistance he received from Sir William Merewether, the Commissioner in Sind; Major Tyrwhitt, Political Superintendent Thurr and Parkur; Major Wallace, Acting Collector of Hydrabad; and Mr. Tyndall, Deputy Collector of Sehwan; and he further adds that the Subordinate Revenue Officers begin to see that it is there duty to further the progress of vaccination, by explaining to the people the bene-

fits of it. In Kattiawar, Dr. Butler says the Chiefs have given every assistance, and were most courteous to him when on his tour. He says there is a tendency to employ too many Vaccinators; but I have no doubt Dr. Butler will have influence enough to prevent the Chiefs doing so. Too many is as great an evil as too few. I have now gone through every one of our Circles, and I feel perfectly certain that the splendid progress of vaccination in Western India is due in a great measure to the countenance and aid so freely given by the Revenue and Political Officers; I never found them backward in helping us when called on for aid; and many of them go much further, and display an anxiety that vaccination may be placed within the reach of all in their districts.

Transfer.

34. In my last report I recommended that Sattara Collectorate be transferred to the Central Circle (Maratha-speaking), and Kulladghee to the Southern Circle (Canarese-speaking). Government approved of that, and on the 1st April 1870 the transfer took place.

Commendation of Superintendents.

35. On a review of the work of 1869-70, I come to the conclusion that the Department has worked well as a whole; and I have much pleasure in stating my satisfaction thereat. It is true that in several Circles instances of falsification came to light, but until there be closer supervision, I can hardly lay any blame for that, either on our system, or on the Superintendents. The Superintendents have, I think, done their duty well, some of them exceedingly well, and I would beg to bring the names of Drs. Butler, Welsh, and Gordon to the favourable notice of Government. I regret that Dr. Welsh has resigned his appointment. His zeal and industry in the Rewa Kanta has during his superintendence of four and a half years brought a neglected Circle into first-rate order, which, I hope, will be maintained. Dr. Blanc has introduced animal vaccination into India, and has taken considerable trouble to establish it. For this service, as well as for his energetic superintendence, I would beg also to bring his name to the notice of Government.

Weekly Returns, &c.

36. For several years back weekly returns of vaccination have been in use in the Sind Circle. They were introduced by Dr. Martin, when he was Superintendent of Vaccination in Sind; but it was left for me, on succeeding him, to bring them into general use there. After I became Superintendent General, Mr. Robertson, Collector of Dharwar, who takes great interest in vaccination, suggested

that some means of informing the local Officers of the whereabouts, &c. of Vaccinators should be adopted. I thought that weekly returns from the Vaccinators to the Mamlutdars, who should forward them to the Collector, would meet Mr. Robertson's object, and on bringing the subject to the notice of Dr. Arnott, he authorized me to introduce the weekly return form throughout the Presidency. This has been done, and I am happy to say that the Superintendents generally speak of it having been very useful. The object of it is—first, to keep the Superintendents and Revenue Officers aware of the villages in which the Vaccinator is working; and, second, to interest the Subordinate Revenue and Village Officers in the progress of vaccination. I am sorry to say that the new rules regarding franking is interfering with the usefulness of these returns, because a Vaccinator cannot frank to a Mamlutdar, and there is no provision in my Budget for 1870-71 for such a number of postage stamps as would be required. I am of opinion that the best plan would be to allow Vaccinators to frank all returns of vaccination to Mamlutdars as well as to their Superintendents.

Can Syphilis be transmitted by vaccination.

37. During the last few years there has been a good deal of discussion in Europe about the communicability of syphilis by vaccination, and it seems to be accepted by many eminent men of the Medical profession that syphilis has been in several instances communicated to healthy children from a syphilitic vaccinifer. This is not the place to enter into a discussion as to whether a typical vaccine vesicle may contain syphilitic as well as vaccine virus, but it seems to be quite certain that the blood of a syphilitic person is capable of communicating syphilis. All Vaccinators should be instructed by Superintendents of Circles never to vaccinate with lymph mixed with blood, and that only healthy children with typical vaccine vesicles should be used as vaccinifers. I called on Superintendents to report their experience in this matter, and the following is a summary of each report:—

1st.—Dr. Gordon, Central Circle, has examined 14,000 children, and did not see an instance of syphilis having been communicated by vaccination.

2nd.—Mr. Raby, Southern Circle, has examined 8,000, and has never seen a case.

3rd.—Dr. Blanc, Western Circle, believes in its possibility. Has examined about 5,000 children, and has never seen a case.

4th.—Dr. Colah, Northern Circle, has examined nearly 50,000 children, and never saw a case.

5th.—Dr. Williams, Sind Circle, has examined over 18,000, and has never seen a case.

6th.—Dr. Butler, Kattiawar Circle, has been nine years connected with the Vaccination Department, and never saw a case of syphilis traceable to vaccination.

7th.—Dr. Welsh, Rewa Kanta Circle, has been nearly five years a Superintendent, and has never seen a case of syphilis resulting from impure lymph.

8th.—Mr. Anunta Chandroba, Presidency Circle, in twenty years' experience never saw syphilis communicated by vaccination.

In conclusion, I would say that during the seven continuous years I have been in the Department, I have never seen a case which I could trace to vaccination, although for years this subject has engaged my attention. I have examined about 60,000 vaccinated children. Syphilis in many parts of this Presidency is not a rare disease. I do not wish for one minute to say that syphilis may not be communicated by vaccination; all I do say is, that I have never seen it, nor has any one of the Superintendents—and yet we have examined over 200,000 vaccinated children. This evidence is negative; but we can't have positive evidence without experiments, and I would not ask any one to submit to experiments to obtain positive evidence. However, experiments of Cullerier and others "on the effects of intentional admixture of syphilitic matter and vaccine, and of the vaccination of large numbers of persons with vaccine intentionally taken from persons suffering with constitutional syphilis, add positive evidence of the most powerful kind against the possibility of transmitting syphilis by an ordinary vaccination with lymph taken out of a true Jennerian vesicle."* It is possible that these experiments may have been vitiated by the persons who were experimented on having already been syphilized. We now know that all Hunter's and many of Record's experiments on syphilization were vitiated by the circumstance that the persons experimented on had already suffered from syphilis. From all that I have read on the subject in the last few years, I come to the conclusion that syphilis may possibly have been communicated by vaccination, but that the evidence given in support thereof could not prove it by induction.

38. At the commencement of 1869 I was in the Southern Circle; from there I went through Sawunt Warree, and in my last report mentioned that I was well pleased with the progress of vaccination in that State, where

* The "Practitioner," No. XVII., November 1869.

Colonel Schneider has done so much to render it popular. In the Western Circle I examined some vaccinations in Vingorla town, and schools there. The result in the schools were :—

1. English Schools	Vaccinated	37
	Had small-pox	3
	Unprotected	3
	Total	43
2. Native School (Boys)	Vaccinated	91
	Had small-pox	9
	Unprotected	14
	Total	114
3. Native School (Girls)	Vaccinated	29
	Had small-pox	1
	Total	30

I was very well pleased with the efforts made by Mr. Apothecary Hanson. From Vingorla I returned to Bombay by steamer. I visited the Superintendent of the Western Circle at Oorun, and inspected his Office records. I visited the Kattiawar Circle, to learn, by a personal interview with Dr. Butler, something about the arrangements in his Circle for superintending the large number of Native Chiefs' Vaccinators, and came to the conclusion that the system, though not by any means perfect, was about as good as could be practically got at. I suggested to Colonel Anderson, the Political Agent in Kattiawar, that it would be advisable for the Superintendent to be consulted by the Chiefs before appointing, dismissing, or fixing the pay of their Vaccinators; and this, I am happy to say, the Chiefs almost invariably do. In August I proceeded to Europe on privilege leave. During my absence my duties were ably performed by Dr. Niven. When "at home" I got some insight into the working of the Vaccination Acts in England, Scotland, and Ireland, which was useful to me in drawing up the draft of the Bombay Vaccination Act. On returning to India, at the end of November, I drew up and submitted a draft of the Bombay Vaccination Act, and then started for the Rewa Kanta Circle, through which I went in company with Dr. Welsh. I visited a number of villages in Rajpeepla and Punch

Mahals, and was much pleased with the progress of vaccination in this Circle. Dr. Welsh deserves great credit for the advance which has been made during his time of office as Superintendent. When he joined his appointment in 1865 there were five Government and five Native States' Vaccinators; there are now ten of the latter. In 1865 the vaccinations were 7,331; in 1869-70 they are 19,642; and he invariably tests the Vaccinators' work by calling the names from the registers. From the Rewa Kanta I passed into the Northern Circle, and joined the Superintendent at Moondah, in the Kaira Collectorate. I saw the children of a good many villages in the collectorates of Kaira and Ahmedabad. We called the children's names over from the registers. One or two of the Vaccinators had their registers wonderfully correct, and none had any false names, but I regret to say that I saw several Vaccinators working with deteriorated lymph; this should never happen; and while in every other respect I can speak very highly of Dr. Colah's arrangements, I regret that any Vaccinators should ever, under any circumstance, use bad lymph. Many of the vaccine marks were bad, showing that the lymph had been deteriorating for some time. After very carefully considering the cause of the deterioration, I came to the conclusion that the chief cause of it was the Vaccinators being in the habit of vaccinating too many children from one vesicle. Dr. Colah issued instructions to all his Vaccinators not to vaccinate more than five or six persons from one vesicle, and he renewed the lymph of nearly every Vaccinator in his Circle immediately from the English lymph which I gave him. After passing through Kaira and Ahmedabad Collectorates I entered Kattiawar, and along my route I examined the villages. In Walleh I saw one hundred and thirteen children, all of whom, except two, had good marks. In Limra twenty,—two unsuccessful, eight had bad, and ten had good vesicles. In the school here there were fifteen children, only two of whom had been vaccinated. In Babra, with Captain Russel's assistance, I saw eighty-six children, of whom thirty-four were well vaccinated, two unsuccessful, twenty-two had suffered from small-pox, and twenty-eight were unprotected. I saw some good vesicles here. In Surdhar I saw seventy-eight children, nearly all of whom had good marks. In Rajkote two hundred and fifty children were examined, nearly all had good marks, three were unsuccessful, and a very few had bad marks. At Darole and another village I saw sixty-four vaccinated children, all good. At Jooria one hundred and sixty nine vaccinated children were examined, only one or two of whom had bad marks; there was excellent lymph here. On the whole, then, the work in Kattiawar Circle which I saw was very fair. From Jooria bunder I crossed the Gulf of Kutch to Kutch. In Bhooj I saw

His Highness the Rao's Medical officer, Mr. Dorabjee Hormusjee, and suggested to him that some arrangement should be made for superintending His Highness the Rao's Vaccinators, and that their number should be increased. I was sorry that I did not meet Major Shortt, the Political Agent, at Bhooj. He had gone with His Highness the Rao to meet His Royal Highness the Duke of Edinburgh. But I have much pleasure in stating that His Highness the Rao has since my visit appointed one more Vaccinator and a Superintendent. In Bhooj I saw only nine vaccinated children; all had good marks. From Kutch I returned to Bombay, by boat, about the end of the official year.

J. PINKERTON, M.D., Surgeon,
Superintendent General of Vaccination,
Bombay Presidency.

Matheran, 3rd June 1870.

VACCINATION UNDER SUPERINTENDENTS.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D. (on leave).

Acting Superintendent.—Assistant Surgeon W. R. GORDON, M.B.

Establishment.—Twenty-nine Vaccinators under Government, two under Native Chiefs, fourteen under Municipalities, and seven Dispensaries.

Population, 4,125,788. Total cost, Rs. 18,780-3-0. Average cost of each successful case of vaccination, 4 annas and 7 pies.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding those Unknown.
			Increase.	Decrease.		
Government.....	1868	52,957	.....	.....	51,001	97·6
	1869-70	55,959	3,002	.....	53,405	97·0
Native Chiefs ...	1868	1,602	.....	.....	1,495	94·6
	1869-70	2,635	1,033	.....	2,508	95·5
Municipalities ...	1868	5,953	.....	.....	5,241	93·7
	1869-70	7,975	2,022	.....	6,978	94·4
Local Funds ...	1868	.....	.....	.....	.....	.....
	1869-70	1,902	1,902	.....	1,561	85·4
Dispensaries.....	1868	603	.....	.....	436	76·4
	1869-70	789	186	.....	674	89·7

Increase.

In submitting the Report for the year 1869-70, it is with much pleasure that I am able to show a satisfactory increase in the number of vaccinations, as compared with the year 1868. From the above table it will be seen that there is an increase in every establishment, amounting in the aggregate to 8,145. But for comparison, from this must be deducted the number vaccinated by the three Local Fund Vaccinators, who were appointed during the year, leaving an actual increase by the same number of Vaccinators as there were last year of 6,243. I attribute this—1*st*, to the continuous active supervision throughout the year; 2*nd*, to the increased pay of the Vaccinators; 3*rd*, to the distribu-

Cause of Increase.

of "*zahirnammas*" to every village in the Circle; *4th*, to the universal use of the amended return, introduced by Dr. Turnbull, of the unprotected children in every village; and, *5th*, also in a great measure, I believe, to the fact that the benefits of vaccination are now more fully appreciated by the natives.

Average number of vaccinations by each Vaccinator.

2. The highest number of operations was performed by Tattia Dhondeo (General No. 244). He vaccinated 4,407 persons, exclusive of the two Vaccinators employed in my office; the average number of operations performed by each in the Government establishment was 2,072. Considering the difficulties to be overcome, the number of vaccinations performed by many of the Vaccinators is very fair indeed. Some, however, have not exerted themselves sufficiently in proportion to the assistance and support accorded them. I have imposed a few fines for laziness and negligence, but in most cases my representations have been at once responded to. I must here observe that much might be done to make vaccination more effectual, if all the native officials could be made to take sufficient interest in this very important part of their duties. From many talookas I receive no complaints of want of assistance; but in not a few little or no support is given, and I have had on several occasions to bring to the notice of the Collector or Mamlutdar the frequent complaints by Vaccinators of want of assistance on the part of the village officials.

Importance of Native officials interesting themselves in vaccination.

Sex.

3. Of the total number 51·8 were males, and 48·2 females; nearly the same as last year.

Caste.

4. The following table will show the percentage of each caste as compared with 1868 :—

Years.	Christian.	Hindoo.	Mussalman.	Parsee.	Other Castes.
1868	0·3	88·7	4·2	.....	6·9
1869-70.....	0·01	87·4	5·2	·0008	7·3

These figures are very similar to last year, and call for no special remark.

Age.

5. The number of infants vaccinated is greater by one per centum than in 1868; the percentage for 1869-70 being 38·2 under, and 61·7 above one year of age.

Percentage of Success.

6. Of the total number vaccinated by the several establishments within the Circle, 97· per centum were successful, excluding those doubtful. This percentage is a little too high, as will be seen from the following table of the monthly inspections of children :—

Months.	Number of Villages inspected.	Number of persons in Vaccinators' Registers.				Number of persons whom the Vaccinator has returned as vaccinated.				Vaccinated children seen, but names not called from the Register.
		Present during inspection.		Absent during inspection.						
		Successful.	Unsuccessful.	Absence accounted for.	Unaccounted for or false.	Successful.	Unsuccessful.	Doubtful.	Total.	
October	39	893	55	925	17	1,793	39	58	1,890	121
November	46	1,552	118	1,995	46	3,468	90	153	3,711	80
December	36	1,684	108	1,091	...	2,788	53	42	2,883	132
January	34	1,290	89	630	...	1,945	50	14	2,009	41
February	31	1,046	58	3,072	...	3,812	172	192	4,176	50
March	30	785	63	722	...	1,489	47	34	1,570	71
Total.....	216	7,250	491	8,435	63	15,295	451	493	16,239	495

From this table it appears that I have during the last six months called 16,239 names from the Vaccinators' registers. There were present during inspections 7,741, and of these 93·6 were successful; but of the 16,239, the Vaccinators had returned 97·1 as successful, excluding those doubtful. The number (63) entered in the above table as unaccounted for, or false, occurred in the returns of one Vaccinator, who was dismissed the Service. This will be alluded to subsequently.

State of Lymph.

Vesicles.

Lymph exchanged.

7. The quality of lymph in use during the period under review has been, on the whole, satisfactory, with the exception of the two instances mentioned in the *résumé* of my tour. The vesicles have been generally normal and well developed; the cicatrices well marked, pitted, and characteristic. Lymph has been exchanged with Superintendents of the several Circles within the Presidency. With a certain amount of care and attention in the selection of vesicles from which to propagate the virus, I believe that vaccine lymph may be maintained for some years in a state almost as healthy and active in this country as in England. During the last six months seventeen tubes charged with English lymph have been received from the Superintendent General. The lymph in ten of these tubes proved successful on application. Two were broken in transmission through the Post Office. The lymph on five ivory points also received proved inert. From these sources of English lymph, supplies have been distributed over the greater part of the Circle. During the year 1869-70 I have distributed 282 capillary tubes, charged with lymph. With the exception of one occasion, when glasses were specially asked for, tubes have always been supplied. I regret that I am unable to show

in a tabulated form the results. The replies received have been so few that such is not practicable ; but I am of opinion that a fair amount of success has attended its use.

Inoculation.

8. No reports of inoculation have been received during the year ; and if such a practice exists within this Circle, it is only to a very limited extent in some of the outlying districts of Khandeish.

Apathy and indifference on the part of the people, and paucity of Vaccinators, are the chief obstacles to the extension of vaccination.

9. Apathy and indifference appear the great impediments to the extention of vaccination ; but there is also another and a very great one indeed, viz., the paucity of Vaccinators over the country. In the course of my tour I have endeavoured personally to persuade and conciliate the people ; and as I heard the occurrence of small-pox in those vaccinated advanced as an objection, I have, wherever small-pox existed, endeavoured to convince them of the advantages of vaccination. The inhabitants of large villages are more prone to prejudice than those of small. It is very seldom that this prejudice extends to villages in the vicinity of the large towns. The Vaccinator in the Niphar Talooka pointed out to me instances confirming this, and also that he has known prejudice exist only for a time. He visited the village of Doghur about the beginning of the year 1869, but could obtain no subjects ; but on again visiting the place in November, he found the people anxious for vaccination.

10. During the year 1869-70 I have examined the work and lymph, and tested the returns, of twenty-two Government Vaccinators, nine Municipal, one Native State, and also work at four Dispensaries. All have been found correct, with the exception of the returns of Narayen Gopall (General No. 241), who was dismissed the Service. With reference to testing the correctness of these returns, I must mention that my Carkoons, Balcrishna Rajaram (General No. 207) and Ramjee Khunderao (General No. 240), have rendered most effective assistance, being ever ready to check the slightest difference between the Vaccinator's return and the village register.

Cost.

11. The following table shows the expenditure and cost of each successful vaccination in the several establishments :—

Establishment.	Successfully vaccinated.	Expenditure.				Cost of each successful Vaccination.
		Rs.	a.	p.		
Government	53,405	15,124	3	0		4 annas and 6 pies.
Municipal	6,978	2,654	0	0		6 „ 1 „
Local Funds	1,561	480	0	0		4 „ 11 „
Native States	2,508	522	0	0		3 „ 3 „
Dispensaries	674	None.				Nominal.
Total.....	65,126	18,780	3	0		4 annas and 7 pies.

Thus it appears that the cost of each successful vaccination in the Government establishment, although debited with the cost of administration, is less than in the Municipal or Local Funds' establishment.

Municipalities' Vaccinators.

12. There are fifteen Municipal Vaccinators in this Circle, and the numbers vaccinated by them contrast very favourably with the previous year, there being an increase of 2,022 operations. Two of these Vaccinators have been appointed within the last month, one by the Municipality of Joonere, and the other conjointly by the Municipalities of Kheir, Warreh, Muncher, and Allundee, in the Kheir Talooka. The former is the native Doctor in charge of the Dispensary. The latter only began work on the 1st April, but his appointment shows very clearly that the benefits of vaccination are becoming more fully appreciated by the natives. Until very lately, little or no vaccination had ever been performed in any of the four villages for which he is appointed. I had meetings with three of these Committees, and, from the desire expressed to possess a Vaccinator, I am inclined to believe that the work will be carried on energetically and effectually. The Vaccinator employed by the Sangola Committee resigned, but his place was filled up with as little delay as possible. The Vaccinators maintained by the Municipalities of Sholapore and Nassick were dismissed without any reference being made to me on the subject; other men have been appointed to both places, one on my recommendation, and the other on the recommendation of Mr. Burn, in charge of the civil duties at Nassick. Notwithstanding the increase, the numbers vaccinated monthly by most of these Vaccinators have not come up to my expectations. No doubt they have many difficulties to contend against; but from what I have seen, I believe the chief cause to be the want of interest felt by the individual members of Municipalities in the promotion of vaccination. All Municipal Vaccinators, except those of Poona and Nassick, operate in the surrounding villages within a radius of three miles.

Joonere Municipality and several others have appointed Vaccinators.

Native States' Vaccinators.

13. In this Circle there are only two Vaccinators under Native Chiefs. During the period under review there is an increase of 1,033 vaccinations, as compared with 1868; the Vaccinator in the Peint State was sick for about six weeks, otherwise the increase would have been still greater. So far as I am aware, every facility is afforded to these men for carrying on their work.

Local Funds' Vaccinators.

14. Vaccination by Local Funds' Vaccinators began during the year. In April 1869, the Collector of Poona informed me that Rs. 720 had been sanctioned in the Local Fund Budget for the maintenance of Vaccinators within the zillah. Three Vaccinators were appointed in August upon a monthly pay of Rs. 13, and one rupee for contingencies. So as to increase their pay I solicited a further grant for the current year, but I understand the Committee have declined to sanction it; so far as I am aware no

definite arrangement for appointing Local Fund Vaccinators has been come to in any of the other zillahs, but the matter is under consideration.

Dispensary Vaccination.

15. The number of vaccinations performed by Subordinates in charge of Dispensaries has not been so great as might have been expected. This is easily accounted for, when we consider that they only vaccinate those who voluntarily present themselves at the Dispensary, and that in many instances it is difficult for them to keep up a continuous supply of lymph. In order to remedy this, I would beg to suggest for the favourable consideration of the Inspector General, that either the apprentice or medical pupil attached to the Dispensary be directed to vaccinate through the town one day in every week. By this means, not only would a fresh supply of lymph be kept up, but the apprentice or pupil would be acquiring knowledge of a subject, which, although considered simple, and almost below notice, is often very imperfectly known by many of the young subordinates.

Small-pox.

16. Small-pox has prevailed, more or less, in every talooka of this Circle, except one; but the disease only assumed an epidemic form in the talookas of Indee and Shindghee, in the collectorate of Kulladghee.

Statistics of Small-pox during the year 1869 *in the Central Circle of Vaccination.*

Collectorate or Native State.	Total number of cases of Small-pox during the year 1869.	Of the total number were vaccinated		Of those died of small-pox who were vaccinated.		Of the total number were unprotected	Of these died of Small-pox	Total deaths from Small-pox out of the total number of cases.
		In Infancy.	In after life.	In Infancy.	In after life.			
Ahmednuggur.....	2,972	13	79	1	2	2,880	313	316
Poona	3,790	50	94	2	16	3,646	238	256
Nassick	2,510	80	183	2	13	2,247	251	266
Khandeish	4,954	28	276	8	52	4,650	563	623
Kulladghee	5,161	144	387	...	22	4,630	866	888
Sholapore.....	2,548	15	74	1	8	2,459	299	308
Peint State	8	...	...	...	...	8	...	...
Aukulcote	Not received.							
Total 1869.....	21,943	330	1,093	14	113	20,520	2,530	2,657
Total 1868.....	47,234	390	1,458	16	101	45,388	4,314	4,431

The totals of 1868 have been entered for comparison, and the contrast is very favourable; the more so, as owing to the change of date for submitting this report, I have been enabled to include in the above table the returns from every talooka

within the Circle, except two; whereas the total for the year 1868 only shows about two-thirds of the actual number of cases which occurred. Of the total number of cases 93·5 per centum were unprotected, and 6·48 had been previously vaccinated. Of the former there died 12·3 per cent. (a very small death rate), and of the latter 8·9 per centum. Of the 6·48 protected, and afterwards affected with small-pox, 1·5 were vaccinated in infancy and 4·9 in after life; of the former there died 4·2, and of the latter 10·2 per centum. Thus it appears that infantile vaccination is nearly two and a half times a better prophylactic than vaccination in after life. In detail, I do not place very much reliance upon these returns, more especially with reference to the number of cases occurring after vaccination. During my tour I on several occasions tested the correctness of the returns for 1868. As statements of the total number of cases of small-pox, they are not very far from correct. As to the numbers entered as previously vaccinated, I discovered some grievous mistakes. As instances, I may mention the returns from the villages of Ankola and Wakharrie, in the Nassick Zillah; the returns from the former showed that 58 cases of small-pox had occurred during 1868, and that all of them had been previously vaccinated. Upon careful inquiry I found this to be altogether incorrect. Only one child had been previously vaccinated. The same was the case with the return from Wakharrie. The deaths from small-pox during 1869 were 2,657, as compared with 4,431 for 1868. Is there no remedy for this terrible loss of life among the young? I do not advocate compulsory vaccination for the present, because I am of opinion that such a law would entail serious hardships on a large mass of the population. Let all other means be fairly tried first, so as to give the natives an opportunity of appreciating the advantages of vaccination. The only means of doing this is by having a Vaccinator for each talooka, so that he might be continually moving among the people, and, as it were, teaching them.

Deaths from Small-pox.

Each Talooka should have a Vaccinator.

Area and Population.

17. The following table will show the area and population of the different Collectorates and Native States in the Central Circle:—

Collectorate or Native State.	Area in square miles.	Population.
Poona	4,272	646,114
Ahmednuggur	5,375	638,904
Khandeish	9,471	861,208
Nassick	10,077	616,399
Sholapore	6,951	568,180
Kulladghee	11,495	707,816
Native States. Peint	960	26,167
Native States. Aukulcote	420	61,000
Total	49,021	4,125,788

18. *Résumé of my tour.*—On the 26th January 1869 I assumed charge from Surgeon T. Miller, 4th Rifles, Sholapore. Having inspected the work of General No. 301, and the Municipal Vaccinator at Sholapore, I passed on to the native State of Aukulcote. Here I inspected the work and lymph of Damodur Rungnath; he was doing well, but complained of the want of lymph allowance: this has since been remedied. Previous to my visit no vaccination or small-pox registers were kept in the villages. I pointed out this to the Mamlutdar, and the registers are now kept. Passing on to the talooka of Indee and Beejapoor, in the Kulladghee Zillah, I inspected the work of General Nos. 133 and 244, and of the Municipal Vaccinator at Beejapoor. With the work of General No. 244 I was particularly well pleased. In the western part of the Indee Talooka I saw many cases of confluent small-pox, and it was obvious, on looking at the disfigured countenances of the children collected for my inspection, that the disease had raged in an epidemic form not long previously; General No. 244 was ordered to work towards this part of the talooka, and the result was that during the month of June he vaccinated 795 children. From what I had seen of his work, I had no reason to doubt the correctness of this return; but I transmitted it to the Mamlutdar, and requested him to ascertain if all the children named had been operated on. It was found to be quite correct.

Tour.

On the 1st April I was at Sangola, in the Sholapoor Zillah. The Coolkurnees and Patels were very ignorant about vaccination, and had no correct registers. Having collected all those within a reasonable distance of my camp, I caused them to prepare correct registers, and had them stamped and signed by myself. The work of the Municipal Vaccinator was carefully performed, and his lymph was good. Leaving this I proceeded through Punderpoor, and examined the work of General No. 168 and of the Municipal Vaccinator. Both were satisfactory, but small in amount. They were warned to exert themselves. Passing on to the Marheh Talooka I inspected the work of General No. 144; his lymph was bad, and it was at once renewed. Scattered over this talooka there are sixteen or seventeen villages belonging to the Jagheerdar of Meeruj, in which very little vaccination had ever been performed. Small-pox was present in two of them at the time of my visit; and the Vaccinator informed me that these unprotected villages acted as hot-beds, from which the infection was disseminated over the whole talooka. I represented the matter to Colonel Anderson, the Political Agent, who at once agreed to allow Rs. 4 per mensem to the Government Vaccinator, on condition that he should operate once a week in some of these villages. On my arrival at Indapoor the Municipal Vaccinator was literally idle. I supplied him with fresh lymph, and urged him to exert himself. Latterly he has improved. In these talookas I had no difficulty in collecting the children for inspection; in fact, many of the people were anxious that I should see their children, and state if it were "all right."

Leaving Indapoor, I proceeded through the Bhimthurry Talooka towards Poorundhur, where I examined the work and lymph of General No. 37: both were

very satisfactory. This Vaccinator has sent me a weekly supply of lymph in tubes during the whole year. In Poona Havielly I examined the work and lymph of General No. 40, who is a careful and efficient Vaccinator. On arrival at Poona I examined the work and lymph of the Municipal Vaccinators. They are both very attentive.

In July, Keshew Sedeshwur informed me that he had visited Lonee Kalvar, a village about twelve miles from Poona, but on account of the aversion of the people to vaccination, he could not get any subjects. I proceeded to the village, had the people collected, explained the benefits of vaccination, and commenced the work myself. On returning to ascertain the result of my work, I brought the Vaccinator with me, and we had no difficulty in getting subjects. In the course of six weeks the Vaccinator operated on 286 children in that village alone.

Leaving Poona on the 4th of October, I travelled through the talookas of Kheir and Joonere, and inspected the work and lymph of General No. 13 and 277; everything was satisfactory, but the work was small in amount. I was not much surprised at this, as the inhabitants are very indifferent to vaccination, and often refuse to allow lymph to be taken from the arms of their children. It was with the greatest reluctance that a few children in each village were brought for my inspection. As an instance, I may mention the village of Kheir, with a population of upwards of 6,000. Here only two vaccinated children were brought to me. On my complaining to the Fouzdar, who was present, and who had rendered every possible assistance, he said some of the people were anxious to know what authority I had for ordering them to bring their children for my inspection. They also stated that they had no objections to show their children if I went to their houses.

Leaving Joonere I passed on to the Sungumnair Talooka, in the Ahmednuggur Zillah, where I examined the work of Narayen Gopall (General No. 241). On calling over the names of the children from this Vaccinator's register I found that many of those entered had never been vaccinated; that the names of several were entered who had had small-pox previously, and these not only bore distinct traces, but their names appeared in the village small-pox register; two were not over twenty days old at the time they were returned as vaccinated, and a few did not exist. In almost every village, where I examined this Vaccinator's work, falsehoods were discovered. What appeared to me at first very wonderful, was that the village registers corresponded in every particular with the Vaccinator's returns; but on questioning the Coolkurnees, most of them admitted they had not been present at the time the children were vaccinated, they had merely obtained a list from the Vaccinator, and entered the same in their registers. The absence of Coolkurnees at the time the Vaccinator is operating is of too frequent occurrence, and, I believe, is mainly due to their residing in another village than that of which they have charge. I communicated the circumstances to Mr. Keyser, the Assistant Collector in charge of the talooka, who investigated the matter, and fined most of the Coolkurnees. The Vaccinator was dismissed the Service.

I then proceeded through the talookas of Ankola and Sinnur to Nassick, examining the old work of General Nos. 207 and 288, and the recent work and lymph of the Head Vaccinator (General No. 13). The work of these men was carefully performed. At Nassick I saw the work of the late and present Municipal Vaccinators. I then passed on through the talookas of Dindooree, Niphar, Chandore, Baglan, and Malligaum, to Dhoolia. At Dindooree the work and lymph of General No. 223 was examined. The cicatrices were generally small, but very distinct. His lymph was renewed with two tubes from England, which proved successful. In Niphar and Chandore I examined the work and lymph of General No. 53, which were satisfactory in every instance. Vaccination has been firmly established in these districts, and the old prejudices have fallen before its onward progress. In Baglan I inspected the work and lymph of General No. 50; he is one of my most careful Vaccinators; and I had every reason to be well satisfied with his work. Not so with that of General No. 60, whose work was next examined, in the Malligaum Talooka; his lymph was bad, and his method of operating awkward, to say the least. Having re-taught him, I renewed his lymph, and before leaving satisfied myself that he would in future perform his work more efficiently.

Leaving Dhoolia on the 29th December, I travelled towards Pimpulnair, where I examined the work and lymph of General No. 211. His lymph was unsatisfactory, and I renewed it with some tubes from the Superintendent of Vaccination in Sind, which produced very good vesicles. Passing on through Nizampoor Petta, a place where little or no vaccination had ever been performed, I entered the Nandoorbar Talooka, where I examined the work and lymph of General No. 225. Vaccination has only been going on here for about a year, but the people are quite alive to its benefits. Leaving Nandoorbar I travelled eastward, through Virdul, to Seerpoor, where I examined the work and lymph of General No. 214. From Dr. Turnbull's remarks upon the work of this Vaccinator I expected to find matters in a very unsatisfactory condition, but during the last two years he has improved: his work was well performed, and his lymph was good. I then passed on to the Amulnair Talooka, where I examined the work and lymph of General No. 272: both were satisfactory. Travelling eastwards I passed through the talookas of Errundole, Pachora, and Nusseerabad. Here I inspected the work and lymph of General No. 258, with which I was well pleased. Thence through Bhosawul to Sowda, where I examined the work and lymph of General No. 140. Having been lately transferred he had only succeeded in establishing good lymph in one village. I vaccinated here with lymph received from England and Bombay. With the inspection of this man's work terminated my duties in Khandeish.

On the 12th March I travelled by rail from Bhosawul to Munmar. Thence, proceeding towards Ahmednuggur, I passed through the talookas of Sawergaon and Kopurgaon, where I examined the work and lymph of General Nos. 288 and 289. The lymph of the former being inactive, was renewed. Very little vaccination has been done in these talookas for some time, and it was with the greatest difficulty I

could get a few children collected for inspection. On the 31st March I reached the Rahooree Talooka, Zillah Ahmednuggur, having during the last fourteen months travelled over the greater part of the six zillahs included in the Central Circle. During 1869-70 I have visited 314 villages, examined 14,013 vaccinated children, and travelled 1,506 miles.

Can Syphilis be transmitted by vaccination?

19. The possible transmission of syphilis by vaccination has engaged my attention; but I have seen nothing worthy of remark.

Assistance from Revenue Officers.

20. The Revenue Officers and their Assistants have given me great assistance. It is mainly through the interest taken by these Officers in vaccination that matters go on so smoothly.

Cost.

21. Detailed statements of the expenditure of vaccination in each talooka separately, and of the monthly returns, are appended; also a statement showing the results of vaccination during 1869-70, as compared with the five previous years.

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon J. Raby.

Establishment.—Twenty-two Vaccinators under Government, twenty-three under Native Chiefs, twelve under Municipalities, six paid by Local Funds, and eleven Dispensaries.

Population, 4,158,989. Total cost, Rs. 22,485. Average cost of each successful vaccination, 5 annas and 10 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
			Increase.	Decrease.		
Government ...	1868	23,962	.....	.....	22,744	.....
	1869-70	28,499	4,537	.....	27,178	97·1
Native Chiefs ...	1868	20,400	.....	.....	19,594	.....
	1869-70	22,572	2,172	.....	21,715	97·3
Municipalities ...	1868	9,463	.....	.....	9,095	.....
	1869-70	9,368	.....	95	8,653	94·8
Dispensaries.....	1868	175	.....	.....	138	.....
	1869-70	1,418	1,243	.....	1,178	86·7
Local Funds ...	1868	.....	.....	.....	.....	.....
	1869-70	3,843	3,843	.....	3,624	97·3

Last year I was able to report a larger number of vaccinations than had been previously performed in this Circle. For the year now under review, I have again the satisfaction of exhibiting a still further increase in the number of vaccinations of the Government, Native Chiefs, and Dispensary Establishments. In the above table there is an aggregate increase of 11,700 over 1868. The total number of vaccinations throughout the Circle is 65,700, and of successfully vaccinated 62,348, or a percentage of success of 96·9. This percentage of success cannot well be compared with former years, inasmuch as the "doubtful cases" were not then deducted, as now, from the total before estimating the percentage. But excluding, for the sake of comparison, those cases from the total of the year 1868, the percentage that year was 96·5) thus giving a very similar result to the present.

Increase of Vaccinations.

Percentage of Success.

2. The greatest increase is in the Government establishment; the total vaccinations performed being 28,499, and of successful cases 27,178, giving a percentage of 97·1. This, I consider, highly satisfactory on the whole, for nearly all these Vaccinators have increased their operations over any previous year; and bearing in mind the difficulties many of them met with in some talookas, I think it reflects considerable credit on them. Sadasheo Mahadoo (General No. 192) has done the greatest number of operations of any Vaccinator of this Circle. General No. 218 has also been doing good work throughout the year. I would beg to recommend, if practicable, some gratuity be given to these Vaccinators.

Government-Establishment.

3. In this establishment there is also a creditable increase of 2,171; the total number vaccinated being 22,572, and of successful cases 21,715, or a percentage of success of 97·3. In the Report for 1868 (paragraph 9) I mentioned that Colonel Anderson, the Political Agent at Kolapoor, had consented to take into consideration a proposal for placing the Vaccinators of that State on a better footing as regards pay. This, I am glad to say, has been since carried out, and the Vaccinators of this State now receive a scale of pay similar to that of Government Vaccinators. I also remarked, in the above paragraph, the fact of the Bhore Punt having thought fit to reduce his Vaccinator's pay Rs. 3. This I must state has since been cancelled, and the Chief has signified his willingness to continue the Vaccinator's pay as before. In the Kolapoor State there is a considerable increase during the year as compared with the previous year, due in a great measure to the increased pay to the Vaccinators. Of individual Vaccinators of the Kolapoor State, the most noteworthy is the Seerole Vaccinator, whom last year I had occasion to severely reprimand. He has apparently improved since then. The Bhoodaghur, Veshalghur, and Panalla Vaccinators are also doing good work, though the returns of the Veshalghur Vaccinator are somewhat less than last year, but still more than the average by far. There was a break in the work of vaccination in the Kagul District, by reason of the decease, from cholera, of the Vaccinator.

Jagheer Establishment.

4. The smallest percentage of success is shown by the Dispensaries, and this rather diminishes at first sight the percentage of the aggregate.

Percentage of Success.

Age and Sex.

5. The percentages of age and sex are :—

Above 1 year	47,493,	or 72·3	per centum.
Under „	18,207,	or 27·7	„
Males.....	35,352,	or 53·8	„
Females.....	30,347,	or 46·2	„

6. The increase in the vaccinations during the year is partially accounted for by the introduction of Local Fund Vaccinators for the last seven months of the year, their operations being 3,624. The Dispensaries also exhibit a slightly larger return than last year, but still not as much as, I think, they might show with a little more exertion and energy on their part.

Cause of Increase.

7. Concerning the Dispensaries there is little to be said, as they are not under my control in any way. But, in fairness to them, it should be stated that they vaccinate only those who voluntarily attend at the Dispensary for the purpose. As natives seldom come forward spontaneously with their children, the comparative smallness of the numbers vaccinated is sufficiently accounted for. In addition, there is no Peon or other person attached to the Dispensary for collecting children.

Dispensaries.

8. During the year Local Funds' Vaccinators were entertained through the exertions of Mr. Robertson, the Acting Collector of Dharwar. I addressed the Collectors of Belgaum, Sattara, and North Canara, respecting the entertainment of such Vaccinators in parts of their collectorates, but was informed that extra Vaccinators were considered unnecessary. With this opinion, in the case of the Belgaum and Canara Collectorates (the latter more particularly), I beg to dissent. I have lately visited the Canara Zillah, and seen many villages where a Vaccinator has not been for many years, because there is no Vaccinator to send to them. Small-pox is frequent in the district. The talookas are large; villages, it is true, are mostly small, but widely scattered, in jungly places, where access to them is difficult. A Vaccinator, to work throughout a talooka where there are so many hamlets (they cannot be termed villages), loses a great deal of time in travelling, and his returns not infrequently must be small. There are four talookas without a single Vaccinator. I am of opinion that a Vaccinator should be entertained for each talooka, or, at any rate, two Vaccinators for the four talookas; and in this collectorate especially, batta ought to be granted to all itinerant Vaccinators. A common coolie in this zillah receives five and six annas a day, and provisions of all kinds are very dear.

Local Funds' Vaccinators.

9. There has been a slight decrease in the Municipalities' vaccinations, explained mostly by the interruption to the work in the Municipalities of Gudduck and Hooblee of the Dharwar Collectorate. Regarding the Gudduck Municipality, there was considerable trouble occasioned by the non-payment of the salary due to the Vaccinator. His pay had been in arrears for some months, and, though I repeatedly wrote to the Collector respecting it, for a long time I could get no payment made. The alleged complaint was laziness of the Vaccinator, and at his laziness, if such it can be termed, there can be little wonder, considering that he was kept in arrears of pay for over four months; and, as he truly remarked, he was not sure that he should be paid at all. At length he resigned the appointment, and some months subsequently I recovered the amount due, through the Collector. I could not, however, procure a Vaccinator to fill the vacancy for some time, as the irregular manner in which the former Vaccinator had been paid being known, others refused to go there. Subsequently it was arranged that the Vaccinator should receive his pay monthly through the Treasury. I then procured a Vaccinator, and since then I have experienced no more trouble, nor received any complaints. There was a lapse of four months in the work. There was also some little trouble with the Hooblee Municipality of a similar description to the above, viz. arrears of pay; and the Vaccinator was obliged to vacate his post for want of the means of livelihood. Smallness of the work performed was the complaint alleged; but no complaint of this or any other kind had been made to me. It seems that the Municipality had arranged to pay the Vaccinator so much per cent., instead of, as usual, a fixed salary; the consequence was the Vaccinator for the first month, not being able to do much work for want of sufficient lymph, found himself receiving a scale of pay much less than he expected. He was to get rupees ten for every one hundred vaccinations. In case, therefore, he only vaccinated, say, fifty his pay would only be Rs. 5. To these terms, it is scarcely necessary to add, no Vaccinator would be willing to consent. After much correspondence, it has lately been arranged to pay the Vaccinator a fixed salary of Rs. 10 a month, and at the rate of Rs. 10 for every one hundred vaccinations exceeding one hundred. This is about the best arrangement that could be made under the circumstances; but Rs. 10, as I have represented, is insufficient, as a fixed salary, to procure the services of a good man. The percentage though is, in my opinion, a desirable mode of payment. During the year three more Municipalities have entertained Vaccinators; viz., the Municipality of Uthnee, Khatow, and Sircy; the latter has been entertained for about two months only, and has done little work yet. On my visit to Sircy in February last, I found this Vaccinator a person wholly unfit for the post, and recommended his dismissal, which has since been acceded to. He was quite incapacitated, by old age and imperfect vision, from performing the duties of a Vaccinator.

Municipalities.

10. The lymph in use throughout the year has for the most part been good, the exceptions met with are stated under paragraph 12. New lymph was introduced in January 1870, from

Lymph.

the Superintendent General of Vaccination, but it has not been spread about much for want of tubes. Animal lymph was also received from the Local Superintendent of Vaccination, Bombay, but proved inert. Lymph has been supplied to the Civil Surgeons of Carwar, Belgaum, Sattara, and the Superintendent of Vaccination, Central Circle, and others.

Small-pox.

11. No returns are received, but reports have occasionally been made of its prevalence in certain localities; and the nearest Government Vaccinator has in such cases been directed as soon as possible to proceed to the district indicated. At all times it is difficult, and occasionally undesirable, to spare the services of a Vaccinator from a talooka, when possibly there may be already isolated cases of variola appearing, and where it is then necessary to carry on vaccination as speedily as possible. Government Vaccinators are very few in a collectorate, and those are the only ones that can be transferred. Small-pox has been very rife in parts of Dharwar and Canara, as also in the Chickodee Talooka of the Belgaum Zillah.

Tour.

12. At the commencement of the year 1869 I was at Kolapoor, but since, in the Report for 1868, I remarked on certain occurrences that I met with during the months of January, February, and March 1869; it is unnecessary here repeating them. In April and May I inspected the remainder of the Sattara Vaccinators, and some of the Kolapoor Chief's Vaccinators. During the rains I was at head-quarters, and occasionally inspected the work of General No. 57, whose lymph was not as good as it might be, from carelessness on his part. In October I again commenced my tour, first visiting the talookas of Gokak and Chickodee, and examining the work of the Government Vaccinators there, with which I was satisfied. In November I inspected the work of General No. 231, but, from circumstances connected with the post, I was prevented seeing his lymph; and as he was unacquainted with the manner of charging tubes, I was obliged to take him with me to the nearest Vaccinator and show him. He was extremely careless in his operations, vaccinating with blood or lymph indifferently. Some other Vaccinators whom I have visited are also addicted to this reprehensible manner of vaccinating, simply, I believe, by reason of the want of knowledge of the injury they are likely to inflict. I cannot but think that it is expedient to adopt some better system of instructing Vaccinators in their work, than merely permitting candidates to receive instruction from some other Vaccinator. I also visited the Chief's Vaccinators of Ramdroog and Torgal. The Chief of the former gave me every assistance in his power, and the vaccinated cases were better collected here than at any place I have visited during my tour. The Vaccinator had been ill for some time, and was out of lymph; and as he also was ignorant of the manner of filling tubes, it was necessary that he also should accompany me to the nearest Vaccinator for instruction. With this object I addressed the Chief, who at once acceded to my request, and was apparently very anxious that his Vaccinator should be supplied with good lymph. I subsequently visited the talookas of Dharwar, Hooblee, Bunkapoor, Hongul, Kamdgee,

Ranehbednore, and Koade, of the Dharwar Collectorate; in some of these talookas vaccination had never been previously performed, and consequently the natives being, to a certain extent, unfamiliar with the operations, opposed the Vaccinators much. In fact, in some places, the Vaccinator could get no subjects for operation. The Local Fund Vaccinators of Kamdgee and Ranehbednore were working with such bad lymph that I at once suspended the latter Vaccinator for a month, and directed him to proceed to the Sub-Assistant Surgeon in charge of the Hooblee Dispensary (which was the nearest) to learn his duties, and when certified to be proficient I would re-employ him. He could not accompany me for the purpose of being taught, as I was moving too frequently. I fined him a month's pay for his great carelessness and inattention. From the Dharwar District I crossed into Canara, and first inspected the work of General No. 251, whose lymph was very good; also examined the work of the Sirey Vaccinator, as before stated. From thence I travelled through the talookas of Compta, Honore, Ancolah, Karwar, and Yellapoor, inspecting the work of the Vaccinators and Dispensaries; but, as a rule, I could get very few collected for inspection.

13. During the year 1869-70 I have inspected 6,172 cases of vaccination; but in no case have I witnessed syphilis conveyed by the use of vaccine lymph.

WESTERN CIRCLE.

Superintendent.—Assistant Surgeon H. J. Blanc, M.D.

Establishment.—Fifteen Vaccinators under Government, two under Native States, and three under Municipalities.

Population, 1,644,869. Total cost, Rs. 12,670-2-4. Average cost of each successful vaccination, 4 annas and 8 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
			Increase.	Decrease.		
Government.....	1868	32,342	.....	.....	31,442	.....
	1869-70	35,904	3,562	.....	34,752	96·7
Natives States ...	1868	5,381	.....	.....	5,083	.....
	1869-70	8,021	2,640	.....	7,476	93·2
Municipalities ...	1868	410	.....	.....	391	.....
	1869-70	1,168	758	.....	1,096	92·2
Dispensaries.....	1868	1,566	.....	.....	1,299	.....
	1869-70	1,678	172	.....	1,368	84·3

Increase.

The above tabular statement shows a total of 45,093 vaccinations performed during the year 1869-70, being an increase on the preceding year of 6,960, not including Dispensaries.

However satisfactory this result may appear, it is not one that should *per se* be considered of much value; indeed, we should be guarded against giving too much importance to a mere increase.

Quality of Vaccination rather than quantity desirable.

2. I fear that in this country *quality* in vaccination is too much sacrificed to *quantity*. Every return relates more or less prominently to quantity, and in an annual report the appearance of the vesicles and cicatrices, the real efficiency of the Vaccinators, the protection afforded by good and typical vesicles, the selection of proper cases, &c., cannot be brought so prominently to notice as the mere number of vaccinations performed. To a "decrease" a sense of blame is attached, and praise bestowed when an increase has occurred. When a decrease takes place, hopes are expressed that an increase will follow a more energetic supervision on the part of the Superintendent. In my humble opinion, this inference is not consistent with facts, and the influence of the Superintendent, as far as quantity is concerned, must, for the following reasons, be somewhat limited:—

(*a*) Sickness among the Vaccinators; changes due to the necessity of removing from their work and sending Vaccinators to places where small-pox has broken out; suspension and dismissal of Vaccinators for bad conduct, &c., are all causes tending to produce a decrease, and beyond the control of the Superintendent.

(*b*) The stay of the Superintendent in a given locality is so very short that it cannot lead to any practical results as far as quantity is concerned.

(*c*) The energy and ability of the Vaccinator, and the disposition of the people among whom he works, are the principal causes of increase and decrease in the number of vaccinations performed.

The Annual Return for 1869-70 bears out this opinion. It will be observed that the increase is partly due to the Native States, which have not during the present year been visited by the Superintendent; also, that during the four months of most active superintendence—November to April—the monthly returns show a considerable decrease on the monsoon months, during which no active superintendence is possible. But if the influence of the Superintendent on quantity is very limited, if existing at all, his importance as to the quality of the vaccinations performed is very considerable.

Charging of Tubes by Vaccinators.

3. Only a few of the Vaccinators in my Circle can fill a capillary tube well. I directed them all to send me every month three tubes each, so that I might always form an idea of the lymph they use. Few of these tubes are properly filled: some have a large vacuum in the centre, and burnt lymph at each end; others are full of air, the bullæ and lymph very prettily alternating; some contain only a little clotted blood; and most of them, as a rule, are worthless.

4. Some Vaccinators make from ten to twelve punctures on one arm and none on the other (I once counted as many as nineteen vesicles on one arm), generally quite close to one another. Some make only one puncture; some, very properly, three or four on each arm, but they are made on a line,—a practice long ago abandoned for the triangular-shaped punctures recommended by Marson, Ceely, and others.

Method of inserting Lymph.

5. The ignorance of the Vaccinators is greatly to be deplored, and, until remedied, vaccinations will not attain in this country the high position it is justly entitled to. To vaccinate from inferior vesicles, to vaccinate children suffering from fever or skin diseases, or those in general bad health, should not be tolerated. By far would I prefer a decrease to the indiscriminate vaccination, as at present performed; not only the first requisite is good lymph taken from typical vesicles, but on a *par* the selection of the vaccinifer should be deemed imperative: vaccination should never be performed on a subject considered, temporarily or permanently, unfit to receive its beneficial influence.

Ignorance of Vaccinators.

6. Having made these remarks, I must add, lest my meaning be misunderstood, that I would myself prefer a large number of vaccinations to a small one, provided always that *quality* was not sacrificed to *quantity*. No result can be more satisfactory than a large increase of good vaccination; but an increase, *merely* an increase, leaving the vaccinated but imperfectly protected or unprotected, is certainly more to be deplored than encouraged.

7. I am also under the impression that the percentage of success given by the Vaccinators is greatly exaggerated. I am not in a position to give, in support of my opinion, any large statistics, but from what I have seen I would place the percentage of success far below 99 or 96, as given for the last two years.

Percentage of Success.

8. *General progress of Vaccination.*—I do not believe that vaccination is unpopular in the Western Circle; in my opinion, it is simply not well understood. My remarks will refer to the Tanna Collectorate, the only portion of my Circle that I have been able to visit. To be able to form an idea of the progress of vaccination in that populous district, it is necessary that we should consider separately the rural population and the inhabitants of the towns or large villages. In the northern portion of the Tanna Collectorate, if we accept as a division the Bombay and Baroda Railway, we find to the eastward of this line a succession of jungles, in which are scattered numerous small villages. The inhabitants of this district are the most miserable and uncivilized looking beings I have ever seen. Barely clad, dirty in their persons, badly fed, all suffering or cachectic from the effects of malarious diseases, and ignorant beyond conception. Amongst these people vaccination has made good progress. To the westward of this same line we find small towns,—Bassein, Mahim, Kelwe, Seergaum, &c.,—or large villages, —Manickpoor, Sopara, &c. These towns and villages are principally inhabited by

General progress.

Brahmins, Bunnyas, and by Mussalmans engaged in trade. Many of them are intelligent and well-informed, and most of them well-off. The houses are substantially built, and an appearance of prosperity pervades the whole district. Here vaccination, as a rule, is not accepted. What course of action should be adopted regarding the inhabitants of the towns and the more enlightened natives—those whom our Vaccinators in their despair designate by the name of "takararee"—compulsory vaccination certainly not with the present means at our disposal, indifferent lymph, and ignorant Vaccinators,—we are not justified in forcing vaccination upon the people. I see, however, no reason to despair, and with proper management the inhabitants of the towns will, I feel confident, not only, most of them, accept vaccination, but even claim it as a boon. On this point I can speak from personal experience. On my tour I visited Tarrapoor, a wealthy town on the coast, and inhabited principally by Brahmins and Parsees. For years no vaccination had been performed in that place; and as I intended to send a Vaccinator to that locality, I endeavoured to smooth the way for him. I opened the question of vaccination with some of the most influential natives, but met with no encouragement. I then proposed to inoculate a heifer with cow-pox lymph, and from it vaccinate, myself, their children if they would promise to bring me twenty-five. To this they agreed. On the appointed day only three or four children made their appearance, and these the relations of a very intelligent Parsee gentleman, Mr. Bhimjeebhai Eduljee, a resident of Tarrapoor, and to whom, for the good example he gave, and the able assistance he afforded me throughout, I beg to tender my best thanks. Although but few children had been brought, many of the inhabitants had come to see what was going on; and when they perceived that I really did vaccinate from the heifer, and performed the operation myself, they all went to fetch their children, and, instead of twenty-five, no less than fifty-four were brought to me; and so well was vaccination received that several children were brought for re-vaccination. Still more came, but I was obliged to send them away, as, hardly believing that even the promised twenty-five would be forthcoming, I had only made on the heifer a limited number of punctures. Not long ago I received, through the Collector of Tanna, a letter from the Mamlutdar of Mahim, requesting that a Vaccinator be sent to Tarrapoor, as he had received applications for a Vaccinator from more than fifty of the inhabitants of that town, who were desirous of having their children vaccinated.

9. The unwillingness on the part of the parents to allow lymph to be taken from their children is a very serious drawback, one, unfortunately, under which not only we, but all Vaccinators, labour under all climes and in all countries. Here persuasion has but little effect, and some other means must be adopted. For the present, in this country, we have but two alternatives,—to pay or fine. Whilst in China I was for a while placed in charge of a hospital for the reception of Chinese, and once a week vaccination was performed there. The parents were obliged to leave a small deposit, which they forfeited if they did not bring their children for inspection on the eighth day, but it was given back to them if they came, whether lymph was taken or not. Under certain circumstances the application of this system might be

tried in this country. I would also suggest that for good lymph we should pay the parents a sufficient amount to induce them to allow lymph to be taken from their children, say one rupee; few, I believe, would refuse the gratuity; and as such agency is only required in towns, the total expense on that score would not be considerable, and should be borne by the towns themselves.

10. In order to ascertain, as far as lay in my power, the progress of vaccination in those parts of my Circle that I visited, I examined the children of the different schools, and obtained the following result:—

Name of Town.	Vaccinated.	Protected by Small-pox.	Protected by Inoculation.	Unprotected.
Bandora	118	18	.....	91
Cheechum	20	53	75	27
Tarrapoor	18	84	20	.....
Callian	24	43	1	28
Bhewndy	10	49	1	14
Total.....	190	247	97	160

According to this tabular statement, the percentage of vaccinated is 37·7. But these numbers are much too small for any correct inference to be drawn from them.

State of Lymph.

11. *The state of lymph throughout the year.—A priori*, I believe that humanized lymph, handled by unqualified men, must quickly degenerate. During my tour I have taken notes of the qualities of the vesicles and cicatrices I saw, and the result is not favourable; but as my experience in this country is limited, it is not impossible that I may have been unfortunate, and have only examined localities in which the results are less favourable than elsewhere. A good vesicle is one that offers a marked central depression, is pearly, hard, raised above the skin, and gives on the eighth day lymph perfectly limped and of a certain consistency; from the ninth to eleventh day a well marked areola surrounds the vesicles in dark skins, felt, if not seen. A bad vesicle (I do not mean a spurious one) presents no, or very little, marked central depression: it is globular, small or large, contains a large quantity of serous lymph, breaks on the slighest pressure, the lymph turbid on the eighth day, the areola often absent, and this frequently followed by an unhealthy sore; a good cicatrix is circular, below the level of the skin, and well pitted; a bad cicatrix is superficial, without pitting, and often very indistinct; "indifferent," applied to vesicles and cicatrices, implies that they are neither very good nor yet bad. I thought it advisable before giving the following tabular statement, showing the result of my inspection, that the value of the terms I use should be clearly explained:—

	Good.	Indifferent.	Bad.	Unhealthy Sores.
Vesicles	36	186	180	138
Cicatrices	119	194	390	
Total.....	155	380	570	138

The percentage of good vesicles is only 9·3, and of good cicatrices 15·3. If we take the total of good and indifferent of both vesicles and cicatrices, we have the percentage of successful cases 45·6. I believe that on a larger scale this percentage would be found to be low. Since the end of the official year I have met with better results; still 97 or 96 per cent is too high. Something between 45 and 97, say 70 per cent., is, I believe, a fair estimate of successful vaccination in this Circle. When speaking of my tour I will have occasion to mention the steps taken when the lymph used by a Vaccinator was found to be bad or indifferent.

Conduct of Vaccinators.

12. The most steady men, or those who have done the most work during the year, are—Assistant Vaccinator Ballo Chalkar (General No. 157), Assistant Vaccinator Gunputrao Hurryba (General No. 220), Assistant Vaccinator Govind Ballal (General No. 125), Assistant Vaccinator Ballaje Chawun (General No. 130), and Apprentice Vaccinator Hurry Ramchunder (General No. 266). To these I beg to suggest that a gratuity of a month's pay be granted.

Constant supply of good Lymph.

13. A constant supply of good lymph is the first desideratum. The question of degeneration of vaccine lymph may in Europe be a question open to discussion; here, it is generally admitted. At the same time, I am not prepared to endorse the opinion that vaccine lymph must necessarily degenerate quicker in India than in more temperate climes. If vaccination in this country were in the hands of able men,—if our Vaccinators were only well acquainted with their work,—we would keep our lymph in as good condition as at home, although in many instances, as Marson states, "the cicatrices would not be so good as formerly;" as we are at present situated the best lymph must quickly degenerate.

Animal vaccination established.

14. Since I have been able, with the valuable assistance of the Superintendent General, to establish animal vaccination in Bombay, (where it has since its introduction been successfully practised by the able Local Superintendent, Anunta Chandroba, and the funds for its maintenance during one year supplied by that philanthropic gentleman, Mr. Cowasjee Jehanjeer Readymoney,) the question of lymph is much altered; and I trust that the system will have a sufficiently fair trial for its merits to be generally acknowledged, and for Government to be induced to take it under its patronage. Should animal vaccina-

tion be continued, and its practice extended to other cities, India will be in possession of as good vaccine lymph as can be obtained from England itself.

Renewal of Lymph from Heifers.

15. On two occasions I inoculated heifers in my Circle, and thereby renewed the lymph in several talookas. I experienced no difficulty whatsoever in procuring heifers, and, far from meeting with any opposition, great anxiety was shown by all to be vaccinated from that pure supply.

16. I propose making during the year a series of experiments with dried lymph on ivory points, and liquid lymph in tubes, or preserved between plates of glass. If, as I believe, points are found to give a higher percentage of success, they should on this score alone be preferred. Points being so much easier to charge than tubes to fill, the Vaccinator could always carry with him a large supply of lymph, and, once taught how to use them, would obtain very fair results. At present the Vaccinators have frequently to put up with bad lymph, as it is not the child presenting the best vesicles that can always be conveyed to another village, but the one whose parents are willing to go. One point can only be used for one superficial incision, and the bad practice of vaccinating a large number of children from an inadequate supply of lymph would then be obviated.

Animal Vaccine a good and pure source of Lymp.

17. I believe that we have now the means of keeping up a good supply of vaccine lymph; but unless the same advantage is extended to the Vaccinators themselves, all our efforts will be made in vain. I supplied on one occasion some very good lymph to the Sub-Assistant Surgeon in charge of one of the Callian Dispensaries, and with it he vaccinated three children; in two (I saw them on the eleventh day) he obtained beautiful vesicles; in the third, vesicles were very indifferent, almost spurious. To my astonishment he had taken lymph from these bad vesicles for vaccinating other children; the result was unsuccessful, and he lost his supply. If Sub-Assistant Surgeons, who are supposed to know better, cannot distinguish between good and bad vesicles, what are we to expect from the generality of our Vaccinators.

Supernumerary Vaccinators desirable.

18. Two or three supernumeraries should always be attached to the Superintendent's Office, and thoroughly trained in every detail of their work, before they are employed as Vaccinators. The want of properly trained men, always at the disposal of the Superintendent, is a want I have greatly felt. Having had to make lately several appointments under the Local Funds, I had no alternative but to appoint men whom I could get, and who were in some respects not well suited for the work. I kept them all for some time near me, allowing them to draw part of their pay; but they had studied under our Vaccinators, and it is well known how much more difficult it is to "unteach" than to "teach." These supernumeraries (who should receive pay at the rate of from ten rupees to fourteen per mensem), after a few months' training, would be of the greatest use. They would be always at hand,

and ready to fill up temporary vacancies, and, through their agency, in time we would have really good Vaccinators—men that could be depended on.

An English Writer in Superintendent's Office desirable.

19. I would now venture to make a few remarks on our own position. The amount of office work that falls upon us is very considerable, and an English Writer would considerably relieve the Superintendent from the mere clerical part of his work. The Marathi correspondence is most voluminous, and for this also no Writer is allowed; the Vaccinator on tour with the Superintendent does the vernacular writing. This not only deprives the Circle of the services of a Vaccinator, but, as the pay this man receives is quite inadequate to meet his own expenses and keep his family at home, he is discontented, and only anxious to leave a post where his services meet with no adequate remuneration. I therefore beg to suggest that an English Writer be sanctioned to the Superintendent; but should this expense not be admissible for the present, that, at least, the Vaccinator employed as a Carcoon be granted a somewhat better pay, say Rs. 30 per mensem, and, when on tour, sufficient travelling allowance to allow him to keep a tattoo.

Small-pox.

20. No returns of small-pox have been received this year from the Collector of Rutnagherry; but the Collector, at my request, has been good enough to direct the Mamlutdars in his collectorate to supply them to me from the beginning of the official year 1869-70, with the exception of two talookas, Mahim and Mahar. I have received all the returns of small-pox for the other two collectorates:—

Unprotected.		Vaccinated.	
Cases of Small-pox.	Deaths from Small-pox.	Cases of postvaccinal Small-pox.	Deaths from postvaccinal Small-pox.
2,891	330	1,586	28

From this tabular statement we gather—

(*a*) A very large proportion of postvaccinal small-pox, 35·2 per cent.

(*b*) A very low rate of mortality; being for the unvaccinated at the rate of 11·4, and for the vaccinated at the rate of 1·7 per cent.

Evidently no weight can be attached to these returns. Whenever outbreaks of small-pox have been reported to me in talookas where no Vaccinator was at work, one was immediately ordered to proceed to that locality, and urged to vaccinate and re-vaccinate all the inhabitants of the villages in which the disease had appeared. But for many reasons the changes that are thus occasioned are much to be regretted, and would not be necessary if the Superintendent had by him some supernumeraries, among whom the best trained could be then advantageously employed.

21. The general extension of vaccination and, through this agency, the extinction of small-pox are the objects most closely connected with this Department; at the same time, as all Superintendents of Vaccinations are Medical Officers, I believe that their presence in the district during several months in the year could be turned to advantage for other practical purposes. I have often regretted being myself unable to recommend, nay, enforce, certain simple sanitary measures in the towns and villages I came across. Such is generally the total disregard of all hygienic measures, that I can no more be astonished at the great havoc annually made by several preventible diseases, such as fever, dysentery, cholera, &c., but only wonder that sickness and mortality are not greater than they actually are. In my opinion great advantages would be derived if the Superintendents of Vaccination were appointed Sanitary Commissioners of their respective Circles, so that, whilst effectually striving to annihilate one of our most dreaded diseases,—variola,—they would, at the same time, by causing the destruction of the germs of many fatal diseases, improve to a great extent the sanitation of the country, and materially assist in increasing its prosperity and welfare.

Superintendents of Vaccination might be also Sanitary Officers in their Circles.

22. In towns in which a Dispensary is situated I am opposed to the entertainment of a Municipal Vaccinator. By Circular No. 2990 of 1868, from the Inspector General, Indian Medical Department, Subordinates and others holding independent Medical charges are informed that vaccination is an important part of the work of all holding independent Medical charges, consequently the Medical Subordinates and others in charge of Dispensaries are bound to see after the vaccination of the towns in which they reside. With the exception of the Medical Officers in charge of the Dispensaries of Dapoolee, Sawunt Warree, and Vingorla, whose work is very fair, all the others have very much neglected vaccination, and have done nothing to forward its cause. These Medical Subordinates should acquire such confidence, respect, and influence from the people among whom they live, that in their hands vaccination should be gratefully accepted, and not meet with the opposition that but too often in towns attends the efforts of the itinerant District Vaccinator. I fear that some of the Subordinates and others in independent Medical charges have strange notions on the subject, and consider it rather below their dignity to vaccinate; forgetting, in false pride, that vaccination is daily performed by the highest of the Medical profession, and its cause associated with a name honoured under every clime—that of the immortal Jenner.

Towns which have a Dispensary do not require a Municipal Vaccinator.

23. Shortly after my return to India I vaccinated a calf with some spontaneous cow-pox lymph I had brought with me, and which I had collected from the last heifer I vaccinated in London, where I had made a series of experiments with that lymph. At Bombay I used both liquid lymph in tubes and some dried on ivory points. The first failed, but, fortunately, from the second a certain number of vesicles were obtained, with which a second

Introduction of Animal Vaccine.

heifer was successfully vaccinated. Once fairly started, and confident from what I saw of Mr. Anunta Chandroba's ability and willingness, I left the working out of the system to him. Having taken over charge of my Circle from Mr. Cody at the end of December, a few days afterwards I proceeded to Bandora, and inspected the work of the Sub-Assistant Surgeon in charge of the Dispensary. None of the children he had vaccinated in the town could be collected; so we repaired to the Convent of St. Joseph and to the Orphan Asylum, where a large number of children had been vaccinated by the Sub-Assistant Surgeon in charge of the Dispensary. He must have worked with very bad lymph, as the average of bad cicatrices was very considerable; indeed, out of 115 that I examined, three only could be called good. I next visited Bassein, and examined the old work of Mahadew Vaniek, Assistant Vaccinator (General No. 58): on the whole it was very bad. I then visited almost all the villages in that talooka, inspecting the work of Apprentice Vaccinator (General No. 324) Gopall Christna; his lymph was bad, producing small bullæ, frequently followed by unhealthy sores. I changed his lymph, having fortunately just received some English lymph from the Superintendent General. I next proceeded to the talooka of Mahim, and examined some of the old work of Vaccinator (General No. 38) Babajee Yadew: on the whole it was bad. I next visited Dhanoo, inspected the work of Head Vaccinator (General No. 38) Maljee Mulakar; his lymph was good, but the amount of work performed very small. From Dhanoo I went to Tarrapoor, where I vaccinated myself fifty-four children from a heifer. My next inspection was made at Tanna, where I examined the work of the Municipal Vaccinator; and, finding his lymph indifferent, I vaccinated for him twenty-two children with lymph of recent human transmission. In one case I mixed together a little humanized lymph and some heifer's lymph: from the mixed lymph I obtained most beautiful vesicles. From Tanna I proceeded to Kurjut, and examined the work of Apprentice Vaccinator (General No. 290) Mahadew Govind; his work was very fair, but he had made so many incorrect returns that I had to recommend his being dismissed the Service. I proceeded from that place to Callian, and examined the Dispensary vaccinations there. I found that vaccination was very much neglected in that town, and, in order to give it, if possible, a start, I vaccinated myself at the Dispensary ten children. I next visited Bhewndy, where I also found the work much neglected. The present Medical Subordinate in charge Dispensary has not been long in that appointment, and as he seems desirous of giving more attention to the vaccination of the place than his predecessor, I trust that next year the results will be more favourable. Before leaving I vaccinated with him a few children. I next visited a number of villages in the Bhewndy Talooka, examining the work of Apprentice Vaccinator Trimbuck Govind (General No. 326); his lymph was worthless, and his work both scanty and indifferent. He promised to do better in future, if sent elsewhere, and to give him another trial. I acceded to his request, and transferred him to Moorbar. I next proceeded to Warra, and inspected the work of Assistant Vaccinator (General No. 166) Ballajee Girkur: it was not good, the lymph he used was very inferior, and the cicatrices of former operations either bad or

Tour.

indifferent. I supplied him with fresh lymph, and directed him to abandon the lymph he was working with.

24. During the year, with the exception of the Native States of Johar and Sawunt Warree, the whole of the Western Circle has been visited by Mr. Cody, Acting Superintendent, or myself. Some talookas have been visited twice. On one occasion I was only a day's march from Johar, and would have inspected the work of the Vaccinator employed there, had he not been absent, without leave, at the time.

Aid received from Civil Authorities.

25. On all occasions I have received every assistance possible from the Civil Authorities, and beg to record my best thanks for the kind manner with which they have, one and all, given to this Establishment their valuable support.

No care of communicated Syphilis met with.

26. During my tour I have examined upwards of four thousand children, and have not met with a case of transmitted syphilis.

27. The following report was handed to me by Assistant Surgeon Cody. It is for the period he held the charge of this Circle:—

Remarks by Assistant Surgeon Cody.

General progress.

During the year under report the progress of vaccination in this Circle has been, on the whole, very favourable. In the collectorates of Rutnagherry and Colaba the progress has been most marked as regards the number of operations and their success. I have examined during my tour nearly every talooka in the two collectorates, and can testify, from personal observation, to the great spread of vaccination amongst the people. They seem to thoroughly appreciate the advantages to be derived from the prophylactic, and the almost complete protection it gives them from small-pox. This is well illustrated by the great anxiety they express to get their children vaccinated whenever small-pox makes its appearance amongst them. During my tour through the Rutnagherry Collectorate, I encamped one day near a village where two or three cases of small-pox had just occurred; and the people, as soon as they learned I was the *Devi* doctor, brought every unprotected child in the village to me voluntarily to be vaccinated; fortunately I had a good supply of lymph with me, and was able in consequence to take advantage of the panic that had seized them, and get all the children vaccinated. I returned again to the village after eight days to see the results, and was glad to find them in nearly all cases satisfactory, and, further, that the small-pox cases were doing well, and that no new ones had occurred. I could plainly see that implicit faith in vaccination was completely established here at least, and that, for the future, there would be little trouble in inducing the villagers to accept it. With these few preliminary remarks, I will proceed to give a report of my tour of inspections.

Tour.

2. In January I examined the work of Apprentice Vaccinator Koondajee Mukundrow, who was working in the talookas of Callian and Bhewndy, Tanna Collectorate. I saw a good deal of

his old work, which appeared to have been well done, the cicatrices being in most instances characteristic. The lymph he was using at the time had deteriorated a good deal, the vesicles not showing at all well. I renewed it for him from some points of English lymph sent to me by the Superintendent General of Vaccination for trial, and directed him not to use deteriorated lymph any more, but to report to me at once its having become so whenever that should happen. I next proceeded to the Kurjut Talooka, where I examined the work of Apprentice Vaccinator Mahadew Govind. His old work was quite satisfactory, but the lymph he had then in use, like that of the former Vaccinator, was not at all good. I renewed it for him, and directed him to leave Khalapoor, where he was then working, and proceeed towards Kurjut, as I had received a requisition for the services of a Vaccinator from some villagers in the latter neighbourhood. Subsequently his work progressed quite satisfactorily. I next proceeded *viâ* Chorok to Panwell, where I examined the work of the Municipality's Vaccinator, Sedeshwur Vittul. He had very little work to show me, and even that little was not at all satisfactory. He accounted for this, in some measure, by stating that he met with a great deal of opposition from the people, and had consequently a difficulty in maintaining his lymph; he also stated that he received a very small amount of assistance from the Municipal Authorities. I renewed the lymph for him, and directed him to work in the adjacent villages within a radius of two miles or so, in order to keep up a good supply of it. I had subsequently to suggest this man's removal, as I found he did not improve. I next examined the work of Vaccinator Babajee Yadow (General No. 38), who was working at some villages five or six miles distant from Panwell. I found his work, both old and recent, very well done. The vesicles he showed me were by far the best I had yet examined, and were decidedly characteristic in their appearance. I took advantage of this lymph to lay in a stock of tubes charged with it, and subsequently found it "take" in every instance I had occasion to use it. I could not at all complain of the quality of this man's work, but the quantity of it was by no means satisfactory. I next proceeded to Oorun, where I examined the work of the Municipal Vaccinator: it was all old work, showing very good and characteristic cicatrices. This man had, I found, left his work a couple of months previous to my arrival, and was consequently dismissed by the Municipality. I made arrangements to send another man to replace him. The Dispensary at Oorun had no vaccination going on in connection with it; the Sub-Assistant Surgeon in charge stated, that he found it a matter of impossibility to induce the people to bring their children to him for vaccination. After my visit another Sub-Assistant Surgeon, Mr. C. Pestonjee, was appointed to the charge, who has made very praiseworthy efforts to keep up vaccination. The numbers in his returns were few to commence with; but still they show that he has gone some way in overcoming what appeared before an impossibility. At Kurunja my office Vaccinator, Mahadew Vaneik, vaccinated a number of children with successful results. Before leaving Oorun I would wish to express my sense of the assistance I received from the Mahalkurry of the Petta, who showed a strong desire to aid me in every way and to further vaccination in the district under his charge. From here I went on to Penn, where I examined the work of Vaccinator Babajee Vittul (General No. 26)

I found his lymph good, and his returns quite correct as far as I tested them. He had been at work here for some years, and had done good service both to the town and surrounding district. I inspected a good many villages in the talooka, and found in them large numbers of children well protected. Before leaving Penn, I directed him to proceed to the Mahar Talooka, and commence work there. My reason for making this change was that there had been no Vaccinator in the latter district for years, and, consequently, there was no protection from small-pox. Sometime after this man's removal I got a requisition from Penn for the services of a Vaccinator to operate on some children in the town. I then suggested the advisability of entertaining a Municipal Vaccinator, as it was nearly impossible for me, with the few men I had at my disposal, to send them one. After some correspondence, the Municipality agreed to entertain a man for one month; but as I could not obtain a trained hand to accept so precarious an appointment, I had to let the matter drop. I may here add that such a proposition from the local administrators of so important and populous a town as Penn is, astonished me not a little. From Penn I proceeded to Alibagh, where I examined some children who were vaccinated by Mr. Pereira, the Sub-Assistant Surgeon in charge of the Dispensary. The lymph he was using was not at all good, so I renewed it for him. His vaccination register, and, as indeed, everything pertaining to his Dispensary, were kept in a most neat and orderly manner. The district portion of this talooka was somewhat neglected as regards vaccination; but of this, and the means taken to remedy it, I will have to speak more fully further on. From Alibagh I proceeded to the talookas of Roha and Mangaum, where I examined the work of Assistant Vaccinator Balloo Chalka; his lymph was very good, and his work, generally speaking, both in quantity and quality, everything that could be desired. He appears to be a most careful and painstaking man, and one who seems to enjoy a considerable amount of respect and influence amongst the villagers. I filled a good number of tubes from his lymph,—which was of the best description,—and brought them on with me to Mahar, my next move: I and my office Vaccinator performed a good number of operations here, and before leaving the talooka saw that the lymph was in as flourishing a condition as could be expected, under the charge of Vaccinator Babajee Vittul. I next proceeded into the Rutnagherry Collectorate, and examined the work of Assistant Vaccinator Ballajee Chawan in the Dapoolee Talooka. I found his lymph good and his returns quite correct. I directed him to proceed to Mangaum and relieve Assistant Vaccinator Balloo Chalka, who desired the exchange. I also saw here some children who were vaccinated by Mr. Hearn, Sub-Assistant Surgeon, in connection with his Dispensary. The vesicles were not good, so I renewed his lymph, and his subsequent reports were more satisfactory. The neatness and order in the general arrangements of the Dispensary struck me at once, and were, I beg to observe, most creditable to Mr. Hearn. I next examined the work of Assistant Vaccinator Govind Ballal, in the Gohaghur Talooka. I found the marks of his old work well defined, his lymph good, and the returns correct. I now proceeded to Rutnagherry for the monsoon, but previous to the coming on of the rains was able to examine some of the old work of Apprentice

Vaccinator Hurry Ramchandur, the marks of which were well defined. I was waited on here by some Brahmins, who requested me to vaccinate some of their children, as there was small-pox just then in the bazaar. I went into the bazaar one morning and vaccinated some thirty children, and, at the same time, told the parents that I would require to see them on the eighth day. This they consented to, but on my going there on the eighth day, I was met by a sturdy refusal to do anything of the sort. I could only, after considerable delay, prevail on them to produce four children for inspection, who, however, showed very good vesicles. I leave this fact to speak for itself, as an illustration of what ignorant prejudice can do even amongst the highest caste, in the absence of compulsion, to hinder our best efforts.

Local Fund Vaccinators.

3. During the monsoon I brought to the notice of Mr. Salmon, the Acting Collector, the few hands we had in the department to carry out vaccination, and suggested that some Local Fund Vaccinators might be engaged. He readily agreed with this proposition, and took advantage of the first meeting of the Committee to bring the matter before them, when an estimate for three Vaccinators, with their Peons, &c., was unanimously passed. A similar grant was made by the Local Fund Committee of the Colaba Collectorate, and in both cases the hands were to be engaged from the 1st April 1870.

Tour.

4. After the monsoon I went to the Dewghur Talooka, where I examined the work of Assistant Vaccinator Casseram Múlakur: it was satisfactory in every way. I next proceeded to Malwan Talooka to see the work of Head Vaccinator Maljee Múlakur. I was satisfied with his work, but had to find fault with his conduct. I transferred him from Malwan to Sunjun Talooka, in the Tanna Collectorate. From Malwan I proceeded through Rutnagherry to a portion of the Rajapoor Talooka to examine the work of Apprentice Vaccinator Hurry Ramchandur. His work and returns were satisfactory. From here I went to Sungameshwur, in which neighbourhood occurred the incident I before stated relating to small-pox, where I examined some work performed by Apprentice Vaccinator Hurry Ramchandur, which I found well done. I next went on to Chiploon, and examined some work performed by Assistant Vaccinator Gunputrow Hurryba. From here I went on to Khed, where I saw some work by the same Vaccinator. In both instances the work was satisfactory. I next proceeded on to the Colaba Collectorate, and examined some recent work of Vaccinator Babajee Vittul in the Rhygurh District, which I found very good indeed. From here I went on through Poladpoor and Mahar to Nagotna, which place I reached about the 20th December, and on the 22nd I delivered over charge of my office, &c., to Dr. Blanc.

5. The conduct of the Vaccinators during the year, with two exceptions, was, on the whole, satisfactory. A few faults there were in some instances no doubt, but nothing more serious than merely to require the imposition of a slight fine. The two exceptions to this were two Apprentice Vaccinators; one of whom was dismissed for falsifying his returns, and the other, a new hand, but a few months in the department, for inattention to, and a general unfitness for, the work.

6. Of the two Native States in this Circle I can only speak from the returns I received. In both instances vaccination seems to be in a most satisfactory condition.

Vaccination in Native States.

7. Of the Dispensaries, generally speaking the returns were by no means satisfactory. There are two or three in which the Medical Subordinates and others in charge of Dispensaries seem to make every effort to vaccinate; but I must say the larger proportion have during the time I acted as Superintendent shown any thing but a strong desire for its spread, or efforts to induce it to become popular.

Vaccination at Dispensaries.

NORTHERN CIRCLE.

Superintendent.—MUNCHERJEE BYRAMJEE COLAH, M.D.

Establishment.—Thirty two Vaccinators under Government, thirteen under Native Chiefs, two * under Municipalities, and twenty-three Dispensaries.

Population, 2,671,228. Total cost, Rs. 18,928. Average cost of each successful case of vaccination, 3 annas and 4 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully Vaccinated	Percentage of Success, excluding those Unknown.
			Increase.	Decrease.		
Government	1868	71,203	.....	.....	.....	.....
	1869-70	70,273	.....	930	65,228	96·9
Native Chiefs	1868	23,080	.....	.....	.....	.....
	1869-70	22,734	.....	346	20,964	95·8
Municipal	1868	2,175	.....	.....	.....	.....
	1869-70	† 2,827	652	.....	2,721	97·6
Dispensaries	1868	200	.....	.....	.....	.....
	1869-70	2,669	2,469	.....	2,235	88·3

The last annual returns and report were for the calendar year 1868; the present ones are for the official year, commencing from 1st April 1869, and ending on 31st March 1870.

Change of year for report.

2. Vaccination has been carried on satisfactorily throughout the period under report. A large number of operations were performed during the first three months of 1869, whilst comparatively less work was done during the corresponding months of 1870; consequently I had anticipated a large decrease. Taking the actual results, however,

General progress.

---

* Two in Ahmedabad omitted. † Work of Ahmedabad omitted.

the decrease is found to be very slight, viz. 930 in the Government and 346 in the Native States' establishment; whilst, on the other hand, there is an increase of 652 in the work performed by the Municipal Vaccinators. Vaccination at the Dispensaries was only systematically carried on during the year under report. I do not take into calculation, therefore, the work of this establishment, but, taking only the other three establishments together, the actual decrease is only 624.

Total vaccinated.

Percentage of Success.

3. The total number of operations performed by the four establishments during the past twelve months is 98,503. Of these 91,118 were successful cases. Excluding from the calculation the unknown cases, and taking only the successful and unsuccessful cases, the percentage of success comes to 96·4.

Sex, Age, and Caste.

4. The result, as regards sex, age, and caste, is shown below :—

Arranged according to sex,	there were			52,684 males,	or 53·4	per cent.
,,	,,	,,	,,	45,819 females,	or 46·5	,,
,,	,,	age	,,	63,041 under 1 year,	or 63·9	,,
,,	,,	,,	,,	35,462 above 1 year,	or 36·0	,,
,,	,,	caste	,,	83,768 Hindoos,	or 85·0	,,
,,	,,	,,	,,	8,057 Mussulmans,	or 8·17	,,
,,	,,	,,	,,	120 Parsees	or ·12	,,
,,	,,	,,	,,	19 Christians.		
,,	,,	,,	,,	6,539 other caste,	or 6·6	,,

Cost.

5. The following table shows the cost of vaccination in each of the establishments separately, as well as the cost of each vaccination :—

Establishments.	Total Vaccinated.	Total Cost.			Cost of each Vaccination.		
		Rs.	a.	p.	Rs.	a.	p.
Government	70,273	15,436	3	8	0	3	6
Native States.....	22,734	3,072	0	0	0	2	2
Municipal	2,827	420	0	0	0	2	0
Dispensaries	2,669	.....			.....		
Total.....	98,503	18,928	3	8	0	3	0

State of Lymph.

6. The lymph in use throughout the year has been on the whole good. Five supplies of English lymph were received; of these only one failed entirely, and the rest have been more or less successful, and I have brought the lymph into use in many parts of this Circle.

I also endeavoured, about the close of the year, to introduce animal vaccine lymph; two supplies of it were from the Local Superintendent of Vaccination, Presidency Circle; and I have been just partially successful in establishing vaccination with it.

Use of Tubes.

7. Supplies of lymph in capillary tubes were sent to the undermentioned Officers:—

	No. of Tables.
Local Superintendent of Vaccination, Presidency Circle	121
Medical Officer in charge Aboo Sanitarium	11
Superintendent of Vaccination, Kattiawar Circle	10
Civil Surgeon, Kaira—a lymph child	2
Superintendent General of Vaccination and Dispensaries, Rajpootana.	24
Hospital Assistants in charge of various Dispensaries in this Circle...	50
Total.....	218

As a rule, no information as regards the result of the use of the lymph is received from the recipients of such supplies.

Small-pox.

8. The period under report has been comparatively a happy one as regards the almost entire absence of small-pox. But soon after the last monsoon, malarious fever prevailed to an unusual extent during the best part of the working season, viz. from October 1869 to January 1870. The prevalence of the fever was very general. Our Vaccinators enjoyed no immunity from it. Many were laid up. Some succeeded in just keeping up their lymph, whilst others had actually to stop work. It was also difficult to carry on work among the people during such sickness. The returns of these months consequently show less work.

Vaccination introduced into Dhurrumpoor.

9. In paragraphs 19 and 20 of last report, mention was made of the non-existence of vaccination in the Native States of Dhurrumpoor and Bansda. During the year under report vaccination has been introduced into Dhurrumpoor. Through the exertions of Mr. T. C. Hope, the Agent to the Governor for these States, the Dhurrumpoor Durbar consented to entertain a Vaccinator at an annual cost of Rs. 270. No time was lost in making arrangements for sending one. Since November last, vaccination has been carried on in Dhurrumpoor, and up to the end of last month twenty villages have been vaccinated and 1,107 operations performed. As the Native State of Bansda is a small one, I hope to succeed in making arrangements for entrusting its vaccination to the Dhurrumpoor Vaccinator.

Revision of Pay.

10. Consequent upon the stoppage of grain compensation, the Vaccinators and Peons were receiving very low rates of pay, and were much dissatisfied when I submitted my last report. Since April last, a revision of the whole establishment has been effected.

The Peons, who receive Rs. 7 per month, are now well satisfied, and the Vaccinators also feel thankful to Government for their pay being restored to what they used to receive when getting grain compensation.

New Weekly Return of Vaccination.

11. The Superintendent General of Vaccination introduced a new weekly vaccination return, which was an improvement upon the old one in many respects. Printed forms of this new return were received and brought into general use in August last, the main object in its introduction being to make the native officials take some interest in furthering the progress of vaccination in their talookas. The Vaccinators now report in writing to the Mamlutdars of their talookas, mentioning the villages in which they are about to commence operations. If they anticipate difficulty in any particular village, they request the Mamlutdars to afford them assistance, and in their weekly returns mention whether they got the required assistance. One copy of the return is sent to the Mamlutdar, and, through him, to the Collector of the district. In some places an additional copy is sent for the information of the Assistant Collector in charge of the talooka. The District Revenue Officers are thus kept acquainted with the localities in which vaccination is carried on, and also learn whether the necessary help to vaccination was given by the Talooka Mamlutdar. In case they find that this was not given, an explanation is immediately called for. Thus the Mamlutdars are now obliged to interest themselves particularly in helping vaccination in their talookas.

Re-vaccination desirable.

12. In my last report I pointed out the desirability of carrying on re-vaccination in these parts. About the close of the year, instructions were received from the Superintendent General of Vaccination to take measures for its introduction. A circular was issued to all the Vaccinators in February last, explaining to them what re-vaccination means, and desiring them to introduce it in their talookas from 1st April 1870. It was necessary that the rural population should be informed of this. A *zahirnama*, explaining to the people the advantages of, and the desirability of permitting, re-vaccination has, therefore, been published, and printed copies of it sent to each village through the Collectors of the different zillahs. A circular note has also been sent to all village Patels and Tulatees, enjoining them to use their influence and get all the grown-up children of their villages re-vaccinated. As this is a new thing, difficulties in some quarters are to be anticipated; but I hope that the next annual return will show not a small number of re-vaccinations.

13. All the Collectors and Political Officers have taken up this subject of re-vaccination very warmly; not only for this alone, but for the cordial assistance given to me in all vaccination matters, I feel very thankful.

Vaccination at Dispensaries.

14. The last annual returns contained only the work of three Dispensaries, viz. those of Dholka, Veerungaum, and Dakore. There were then in this Circle nine other Dispensaries already open, and ten new ones have been since opened, making altogether twenty-two district Dispensaries, in nearly all of which vaccination is now carried on. At first

I experienced some difficulty in getting the Hospital Assistants to establish vaccination; the majority of them are now doing some work, but there are a few still who vaccinate two or three children per month only, showing that they take little or no interest in vaccination. During my tour of inspection I visited nine Dispensaries, in two of which only was vaccination carried on, viz. in Gogo and Dholka; in seven others, viz. Kuppurwunj, Dakore, Dhollera, Dhundooka, Neriad, Borsud, and Jumboosur, there was no work. Some of the Hospital Assistants, I am sorry to observe, do not know much of vaccination; one Hospital Assistant, who got his Apprentice to carry on vaccination at the Dispensary, says, in his annual report, that neither "he nor myself had sufficient experience."

Population of Circle.

15. In last report the total population of this Circle was stated to be 2,715,765. Under instructions from the Superintendent General of Vaccination, fresh returns regarding the population of each talooka have been obtained and incorporated in Statement No. I. The total population of this Circle, as calculated from these returns, amounts to 2,671,228. Taking the usual birth rate of 1 in 30, the annual births in such a population should be 89,040: but our annual work exceeds this number a great deal. The annual vaccinations indicate that the population must be about 30 lakhs. The late disastrous famine in Marwar, however, has caused a large influx of destitute Marwarees to Guzerat, and I observed that each family had a goodly number of children, nearly all of whom come under vaccination. This circumstance, I believe, tended much to increase the annual returns of 1868, as well as the present ones.

Tour.

16. The following is an account of my tour of inspection. In January 1869 I commenced the inspection of the Vaccinators of the Native States of Pahlunpoor. I was encamped at Toovud, from which place, and from Summee and Rhadunpoor, the work of the new Vaccinator, Bulvuntrao Gopall, of Rhadunpoor, was examined. His lymph in Toovud was good; in other villages bad. He was found to be an untrustworthy man: he had put one set of dates in his weekly reports, and another in his monthly returns, clumsily attempting to hide the irregularity of his work; the entries of several villages were also doubtful. Of him I have to state that he was selected, examined as to his knowledge of vaccination, and appointed to the post, by the Political Superintendent himself. What, I believe, was my proper work and duty, was done by him without any reference to me. At Rhadunpoor I was encamped for about ten days, during which time I had much to do in the way of giving medical relief to the people. Ever since the introduction of vaccination into the Rhadunpoor territory, the Vaccinators have experienced much difficulty. Among the village population vaccination is availed of to some extent; but in the Kusba itself great opposition is met with, the Kusbatee Mahomedans and the Bunnya merchants not permitting it. I therefore asked and obtained two interviews with His Excellency the Nawab, during one of which, I begged of him to afford the Vaccinator the assistance he was much in need of, and to promote vaccination in his territory. I had also

many and long visits from the Kharbarries, who gave me every assurance of helping the Vaccinator in his work. On leaving Rhadunpoor I felt some satisfaction that this, my second visit to it, would lead to some good result. If the reports however, which I continually receive from the Vaccinator, be correct, things are still much the same as before. From Rhadunpoor I travelled through the talookas of Warye, Santulpoor, and Morewarra, lying on the eastern boundary of the Great Runn, examining the old work of Jeithalall Bechurlall. From Morewarra I travelled to Tehrwara, where Jeithalall was carrying on fresh work. All his past work was satisfactory, and his lymph was good. Of the entries of a few villages, I had very grave doubts as to their correctness: on the whole, however, he was doing well. From Tehrwara I travelled to Seoree, from which place and from Summaow, the work of Jeitharam Mooljee, the new Vaccinator of Khakhrej Talooka, was examined. Jeitharam had only commenced work in November 1868, so that I had only his two months' work to examine, and it was found satisfactory. My next encampment was made at Deesa, where Assistant Vaccinator Vishnoo Luxmon (General No. 172) was working: both his past work and lymph were good. From Ghud and Pahlunpoor, my next two stations, the work of Dana Bhava, the Vaccinator of the Dewan Sahib of Pahlunpoor, was examined. In my last report I mentioned of this man, that he is the best of all Native States' Vaccinators; I was, therefore, sorry to find him working with bad lymph. The lymph of Ghud and other villages was bad, and it had to be given up after a trial of a fortnight. The lymph of Kusba Pahlunpoor was only good, and was kept up. His past work of six months was also bad. There are two other Vaccinators of the Pahlunpoor Superintendency, but one of these (the Dhanera Vaccinator) was dismissed for misconduct about a fortnight previous, and the other (Vaccinator of Wow and Thurrad) had gone away to his native country without asking for leave. I next proceeded to Santhul, in Kuttosun Zillah of Mahee Kanta Agency, where Mulek Bapoo Amibhai was working; his lymph was on the whole good, and his past work satisfactory. Travelling from Santhul I arrived at Mansa, and examined the old work of that place and of Wursoda, performed by Jadevrai Mahdevrai some nine months before. The marks in both places were very good, and his returns very correct. Travelling on from Mansa, I was on the 1st April (the commencement of the official year under report) encamped at Purantej. The fresh and past work of Assistant Vaccinator Hurjeevun Wishwanath (General No. 154) was examined and found good. From Morassa, the next station, the work of Motilall Bapoojee, a Mahee Kanta Vaccinator, who was only employed in the previous November, was examined. His past work was rather middling; his lymph in Thana Mehgraj was good only; in other places, the vesicles, though good in appearance, were small in size. Apprentice Vaccinator Chugunlall Kalidass's work (General No. 311) was also examined from Morassa and from Dehemai. He was found working with very bad lymph: his vesicles were the size of pin-heads: the cicatrices of his past four months' work were also small. He was ordered to stop work and proceed to Purantej to bring fresh lymph from the Vaccinator there. From Dehemai and from Satumba, the work of Jeevram Chuttorbhooj, another Mahee Kanta Vaccinator, was examined. His lymph was also bad and had to be discontinued. I had to take this Vaccinator with

me to my next station, Kuppurwunj, and there supplied him with good lymph. On the 1st May I was in Kuppurwunj, and the work of its Vaccinator, Jeithalall Poonjajee (General No. 173), was examined: everything was found satisfactory. He is a man that can always be depended upon. The Hospital Assistant at Kuppurwunj had hitherto not established vaccination at the Dispensary. I explained to him the desirability of his doing so at once. He wanted some assistance from the Vaccinator's Peon to begin with; this was allowed him, and ever since he has kept on working. The next inspection was that of Assistant Vaccinator Mulek Anoo Anamut (General No. 111), of Thasra. His lymph in one village was bad, in the rest good; the marks of his old work were middling. From Thasra I travelled to Dakore, Oomreth, and Ore, and I examined the fresh and old work of Assistant Vaccinator Gungasunker Ruveesunker (General No. 188). His lymph was good, and his past work satisfactory. From Ore, also, and from Gamree, the work of Assistant Vaccinator Chuguulall Asharam (General No. 221), of Anund Talooka, was examined. His lymph in Anund and another village was good, and in the rest it was bad, and was abandoned. In the previous year this man was detected appropriating the money allowed to parents for carrying their lymph children from one village to another for vaccine purposes, and was consequently reduced for a short period from an Assistant to an Apprentice Vaccinator. This time he was found to have put false dates in his weekly reports, and in one village he had been very cruel in carrying two young women of a respectable class, with their infants, to a distance of seven koss, without any reasonable cause. I have consequently removed him to another talooka. After finishing his examination I left my last station, Gamdee, for Surat on the 20th June. I left Surat again for the districts in the last week of October, and, crossing the Gulf of Cambay, came over to Gogo and commenced work from there. Some past work of former Vaccinators was seen in the villages, and at the Dispensary the old work of Assistant Apothecary Mr. Roane, and fresh work of Senior Apothecary Mr. Lewis George. The Dispensary vaccinations were good. From Gogo I passed through Bhownuggur and Wulleh, and arrived at Burwalla, where Assistant Vaccinator Surdarmia Nunnamia (General No. 170) was working. His work was quite satisfactory. From Burwalla I travelled to Dhollera, the Vaccinator of which place was laid up with fever in August, and had lost his lymph, and had not resumed work again. I had sent him some tubes of fresh lymph from Burwalla by a messenger, and took some with me. Vaccination was established in Dhollera, and from thence two lymph children were taken to Dhundhooka. Vaccination was also established at the Dhollera Dispensary. The past work of Assistant Vaccinator Hurrychund Bhaskerjee (General No. 91) was examined from Dhollera and Dhundhooka, and after thoroughly establishing his lymph I left him for the next man, Assistant Vaccinator Vulubram Dinanath (General No. 177), who was stationed at Koth—of him it is enough to state that he is in every respect an untrustworthy man. His vesicles were mere points in two villages, and in two others there were only one or two children whose lymph was at all good. His old work was bad, and dates of vaccination irregular. He was found to get work done by his Peon. He was fined heavily, with the caution that any future irregularity will be met with dismissal.

From Koth I travelled to Dholka, and examined the work of Assistant Vaccinator Morar Khemchund (General No. 52). His lymph was good and his past work middling, but his register was full of inaccuracies as regards names, sex, result, &c.: his recent work of the past few months was bad. The lymph of the Municipal Vaccinator of Dholka, Hurgovun Bechur, was good, and the lymph of the Dispensary vaccinations under Hospital Assistant Bhow Sukaram was very good. From Dhollera I reached Ahmedabad on Christmas Day. Soon after New Year's Day I took my camp to Butwa, and from there examined the recent and fresh work of Apprentice Vaccinator Kaloo Fujul (General No. 296), which was not satisfactory. Some old work of Dossumia Abdulla (General No. 56), the late Duscroe Vaccinator, was also examined and found very good. From Butwa I visited Jeitulpoor and other villages of Sanund Talooka, and examined the work of Vaccinator Purbhoodass Heerjee (General No. 20). His work was good, and his returns very faithful. From Butwa, I next took my camp to Mhoondah, and for the first time examined the work of Kassinath Mahadew (General No. 41). His lymph on the whole was good, as well as his old work; his register was faithful; and, as regards noting the result of vaccinations, very accurate. It was the middle of January, and the Superintendent General of Vaccination, who was on his tour of inspection in Guzerat, joined me here. Travelling together from Mhoondah we arrived at Neriad, and examined the work of Assistant Vaccinator Muncharam Kasiram (General No. 63). His lymph in the town of Neriad was bad, in the villages tolerably good; his old work was also good. Some lymph received by the Superintendent General from the National Vaccine Establishment of Scotland was tried here, and produced good results after a second transmission. From Neriad we travelled on to Matur, and examined the work of Assistant Viccinator Ichasunker Keerpasunker (General No. 127). Both myself and the Superintendent General were satisfied with his old, recent, and fresh work. Leaving Matur I encamped at Pundolee, in Borsud Talooka, and examined old, recent, and some fresh work of Vaccinator Lakheshvur Ghelabhai (General No. 128) of Borsud. His returns were faithful, but all his past work was bad: the cicatrices were just faintly visible, his vesicles were imperfectly developed and small in size: he seems to have been vaccinating a large number of children with insufficient lymph. I supplied him with some English lymph, which was to be introduced at Borsud. From Pundolee I took my camp to Cambay, and examined the work of its Vaccinator, Goolab Jumiet. His lymph one day was good, the other days bad. English lymph and some animal lymph, received from the Local Superintendent of Vaccination, Bombay, was introduced here. In February 1868 I was in Cambay, and had introduced some English lymph, then received by me from Bombay. I found that the marks of vaccinations with that lymph were very good, but it appeared that the Vaccinator was not able to keep that lymph going. Goolab Jumiet's work was, on the whole, satisfactory. From Cambay I proceeded to Borsud, and completed my examination of Lakheshvur Ghelabhai (General No. 128), which was commenced at Pundolee. It appeared that all his vaccinations of the past two years were bad, whereas those done in previous years bore good marks. The English lymph given to him at Pundolee produced very good vesicles, and it was brought into use, his own

lymph having been abandoned. Animal lymph brought in tubes from Cambay was also introduced here, and after a few transmissions has produced excellent results. From Borsud I also examined the fresh work of General No. 221 at Napaar, and found it to be good. There was no vaccination going on at Borsud Dispensary, and the Hospital Assistant went on leave just after my arrival. Travelling from Borsud to Salol I crossed the river Mhye, and arrived at Karelee in Jumboosur Talooka. Some old work of Assistant Vaccinator Chintamunee Vithul (General No. 96) was seen at Karelee, and I proceeded to my next station, Juntram, where, from the returns and weekly reports, I expected to find him working, but the day of vaccination he was not there. I learned that the vaccinations in Juntram were all performed by another man named Soorujram Nathjee. The monthly returns of January and February were carefully examined; most of the villages were visited; and I was satisfied that this man Chintamunee had left his talooka for his native town, Chiploon, in Rutnagherry, after the first week of January. The work performed by Soorujram was of the worst kind, and there were many false entries. The friends of Chintamunee, at Jumboosur, hearing of my being in the talooka, were intent upon passing off the fraud on me. They procured a false certificate from the Hospital Assistant in charge of the Jumboosur Dispensary, and got up some other false reports. For several reasons it was thought convenient not to undertake any criminal prosecution. Chintamunee Vithul was dismissed from the Service, and the conduct of the Hospital Assistant reported to the Deputy Inspector General, Northern Division, and the Superintendent General of Vaccination. From Juntram I proceeded to Jumboosur, and from thence to Pukhajun in Wagra Talooka, from where the old and fresh work of Apprentice Vaccinator Ruveesunker Tooljasunker (General No. 303) was examined. His past work was not satisfactory: he vaccinates very few children at a time: his vesicles, though normal in appearance, were rather small: his weekly reports were incorrectly dated, vaccinations of one week having been entered into subsequent weeks. I could not exactly find out why he did so, and can only guess that he has been irregular in his work. From Pukhajun I travelled to Bhersum, and by the close of the year under report, had just arrived and encamped at Broach.

Result of the inspection of Vaccinators' work.

17. Of the 28 Vaccinators whose work was examined during the above tour, four were found working with bad lymph; the lymph of five others was not so good as it ought to have been; the rest were doing very good work. Each man's inspection was thorough and searching. During this long tour there was no discovery of any case of making false returns, *i. e.*, entering false names. Mistakes, as regards age, sex, result, and solitary entries of unvaccinated names, have been noticed here and there.

Conduct of Vaccinators.

18. On the whole, it affords me great pleasure to state, as a class, the conduct of the Vaccinators was uniformly good and meritorious, and their work during the year is a sufficient proof of their zeal and industry.

Changes among Vaccinators.

19. There have been but very few changes among the Vaccinators. In the Government establishment, one man, Dossumia Abdulla, Assistant Vaccinator (General No. 56) of Duscroe died after a short illness. In the Native States' establishment, Jadevrai Mahadevrai, Mahee Kanta Vaccinator, was dismissed about the close of the year. He was a very good Vaccinator, but latterly he would neither obey the Political Agent nor myself. His place has been filled up by a new hand, Govindrao Balajee, who promises to be a good, hard working man. In the Pahlunpoor Superintendency, the dismissal of one Vaccinator, Heerasing Ruttonsing, of Dhanera, was ordered in February 1869. This man was of a most violent temper, and was constantly abusing, assaulting, and otherwise ill-treating people. He sent in a report in January 1869, regarding an assault committed upon him by some shepherds. On the other hand, a complaint was preferred against him by the other party before the Dewan Sahib of Pahlunpoor, of his having taken a shepherd woman from one village with her child for lymph purposes, of having committed a criminal assault upon her on the way, and then permitted her to return to her village. The case was investigated by the Durbar Vukeel, who, by the desire of the Dewan Sahib, addressed a Yád to the Political Superintendent, urgently requesting his dismissal. Both the Political Superintendent and I promptly complied with the request, and Heerasing was virtually dismissed in March 1869. Failing in his solicitations with me and the Political Superintendent for re-employment, he seems to have gone and obtained permission of the Pahlunpoor Durbar to go to work again, and did actually work till August 1869. The Durbar, when an explanation was asked, put forth the plea that he was only temporarily re-employed to put down a slight prevalence of small-pox. Whatever may have been the case, it was a most irregular proceeding. Heerasing, though dismissed in March, continued to work till the end of August. It was after several repeated demands that he was finally dismissed. For filling up the vacancy, I proposed, in the first instance, that a respectable man should he selected either by the Durbar or the Political Superintendency, and I would undertake to teach him vaccination. After waiting for some months, I offered to send a competent person at once. It is now more than a year, and yet this place remains unfilled. The dismissal of a bad man was a difficulty, but the filling up of the vacancy with a new man seems to be a greater difficulty. I have related this instance in detail, in order to show the difficulty of superintendence in Native States. In fairness, however, it must be stated here that such a difficulty has only been met with in the Pahlunpoor State. In the Mahee Kanta territories, the supervision is as perfect and uninterfered with as one could desire. Major Black, the Political Agent, takes a great interest in vaccination, and exercises great supervision over the Vaccinators. I can only here express my deep sense of obligation for the ready help which he has always afforded me.

No case of transmitted Syphilis seen.

20. From January 1867 up to the end of March 1870 I have inspected 49,571 vaccinated children, but I cannot call to mind a single case in which there was even a suspicious look

of syphilis. I have not seen a single case of even a doubtful transmission of syphilis as a result of vaccination. It will be seen that my experience of this subject is entirely negative.

SIND CIRCLE.

Superintendent.—Assistant Surgeon J. WILLIAMS, M.D.

Establishment.—Seventeen Vaccinators under Government, thirteen under Local Funds, one under a Native Chief, one under a Municipality, and twenty Dispensaries.

Population, 2,500,000. Total cost (excluding Dispensary vaccinations), Rs. 19,995-9-9. Average cost of each successful vaccination, 5 annas and 4 pies.

Establishments.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
			Increase.	Decrease.		
Government	1868	38,859	.....	.....	38,053	.....
	1869-70	38,179	.....	680	36,681	98·0
Local	1868	23,612	.....	.....	22,966	.....
	1869-70	22,981	.....	631	22,085	99·1
Native Chiefs	1868	2,105	.....	.....	1,891	.....
	1869-70	1,260	.....	845	1,235	100·
Municipality	1868	1,150	.....	.....	1,089	.....
	1869-70	784	.....	366	707	93·3
Dispensaries	1868	3,522	.....	.....	3,265	.....
	1869-70	2,745	.....	777	2,494	90·9

Decrease.

There has been a decrease in each of the above establishments. In the Government and Local Fund establishments a decrease was to be expected; for in 1867 the numbers were 33,821 and 21,854, the considerable increase of 6,788 in 1868 being explained, in the annual report of my predecessor, the late Dr. Ffolliott, by "a large influx of emigrants from the famine districts of Hindustan, which furnished several thousand children for vaccination." There are many famine-stricken people from bordering States in Sind yet, and this may account for the numbers vaccinated being so high as they are; for I had expected a somewhat considerable diminution in the total number vaccinated, owing to the unusually large and long continued rainfall, the cholera epidemic, and the great sickness prevalent after the rains. But, in addition to these causes, in consequence of the "famine prices" ruling in Sind, I had, for six months, to reduce the local Vaccinators from thirteen to twelve, and to divide the "savings" in the manner that appeared to me best amongst the "twelve," to enable them to carry on their work efficiently; otherwise, I am sure, there would have been a far

greater "decrease" in the number vaccinated by Local Fund Vaccinators, as they would have been obliged to dispose of their horses. This reduction of the number of Vaccinators and redistribution of pay was done under the sanction of the Commissioner in Sind. Considering, then, that the whole of Sind (excluding the Dispensaries and Civil Surgeoncies) should, according to the calculations of both my predecessors, not give more than 60,000 vaccinations a year, I think that the Government and Local Fund Vaccinators have worked admirably. The decrease in the amount of work done by the Vaccinator of Kheirpoor State, paid by His Highness Meer Ali Murad, is very considerable, and much to be regretted. The cholera epidemic, and the unusual amount of sickness prevailing from September to February, consequent upon the very heavy rains, sufficiently account for the diminution of vaccinations by Dispensary officers. Many of the officers in charge of Dispensaries commenced vaccinating, time after time, only to give it up owing to the excessive sickness. The greater number of them seem to me most anxious to carry on vaccination, and I hope that this year will show a considerable increase in the number vaccinated.

Sex.

2. The proportion of males to females vaccinated in the talookas is 55·5 to 44·5, whilst in the Dispensary towns the ratio is 58·4 males to 41·6 females.

Castes.

3. In the talookas there were 11·25 Hindoos vaccinated to 81·3 Mussulmans; the remaining 7·45 being made up of other castes, including 4 Christians and 1 Parsee (in the 62,420 total vaccinated). Other proportions obtain amongst the Dispensary vaccinations,—Hindoos 50·4, Mussulmans 48·3; the remaining 1·3 per cent. being made up of 16 Christians, 4 Parsees, and other castes 15 (in a total of 2,745). These proportions are, I believe, in accordance with the populations; the Hindoos chiefly inhabiting towns, and the Mussulmans the districts. But does this account for the difference observable in the number of females to males vaccinated in towns?

Ages.

4. Of those vaccinated at the Dispensaries 46·74 per cent. were under one year old, and of those vaccinated by the Government and Local Fund Vaccinators 39·5 per cent. were under one year, or very nearly at the rate of two under one year to three over one year. I think the percentage of those vaccinated under one year in towns might be a good deal higher, but the percentage of children vaccinated under one year in the talookas seems to me to be as high as it can be expected to reach, for it takes a man about two years to vaccinate the whole round of a talooka.

Percentage of Success.

5. The proportion of successful vaccinations in the talookas, viz. over 96 per cent., seems to me very fair. The lower percentage of the Dispensary vaccinations is partly attributable to several failures in vaccinating from tube lymph, and partly to children not being brought for inspection after having been vaccinated, which necessitates a considerable number being entered as doubtful.

Cost.

6. The average cost of each successful vaccination has varied annually for the last five years; depending on the total of successful cases and the total cost. In 1867 each successful case cost 6 annas and 7 pies, whilst in 1868 each case cost only 5 annas and 3 pies; the total cost, in the latter instance, being considerably below the average, owing to the appointment of Superintendent having beeen vacant for three or four months. We may expect the average cost to be from 6 to 7 annas for each successful case. In the majority of Dispensaries there has been no cost, excepting a rupee or two paid for bringing vaccinifers from a Talooka Vaccinator to the Dispensary. But in Larkhana there has been some payment made for vaccinating, jointly by Government and the Municipality, amounting to Rs. 134, so that each successful case cost 6 annas and 2 pies. At Sehwan, too, a sum of Rs. 7 a month was allowed for vaccinating, which, I believe, has been stopped. It has always been very difficult to carry on vaccination at Sukkur; indeed, the same complaint comes from every Dispensary; and I am afraid that if the large Dispensaries have not the means to keep a Peon, with a fee to encourage the Vaccinator, that the number of vaccinations will dwindle to nothing.

Small-pox.

7. From returns kindly furnished me by the Commissioner in Sind, there appear to have been 471 deaths from small-pox during the year 1869. In the several Collectorates the following numbers are given:—Shikarpoor 234, Kurrachee 134, Hydrabad 79, Thurr and Parkur 23, Jacobabad 1 = total 471. The disease prevailed chiefly during the first five months of the year. For the first three months of 1870 the returns are comparatively favourable, there being only 7 deaths in the whole of the Shikarpoor Talookas, and one in Jacobabad, none in Hydrabad, and none in the Thurr and Parkur. In the Kurrachee Talookas there were 28 deaths from small-pox: these, I believe, occurred in the town or immediate neighbourhood of Kurrachee. I understand the Municipality have been advised to appoint another Vaccinator, and they are likely to adopt this excellent measure; but concerning the outbreak of small-pox, and state of vaccination in Kurrachee, the Civil Surgeon will, I have no doubt, fully report. As I have not complete returns of deaths from small-pox for 1868 by me, I am unable to compare them with those of the past year; but from such papers as I have at hand, it would appear that small-pox prevailed all over Sind, but not to what may be termed a very considerable extent. There is a report of 149 deaths from small-pox in the Kurrachee Collectorate in March 1868, of 69 deaths in the Shikarpore Collectorate in January 1868, reports of outbreaks of small-pox from the Thurr and Parker and Jacobabad. At the end of the year a good deal of small-pox prevailed at Rohree and Sukkur; also at Tatta, and at Sonmeanee on the Mekran Coast. The sources of infection are said to be the neighbouring States, Bahawulpoor, Beloochistan, and the districts to the east of Sind.

8. It was reported to me once that an Inoculator was at work in the Rohree districts; the Mukhtiarkar investigated the case, and said the report was unfounded: but I will see for myself when I make my next tour in Upper Sind.

Tour.

9. My predecessor, the late Dr. Ffolliott, examined thoroughly the districts of Upper Sind in the early part of 1869, marched down the right bank of the Indus, and delivered over charge on the 17th May, and then left on sick certificate for England. He reported his satisfaction with the work done by the Vaccinators. From January to the end of April he travelled over 500 miles, and inspected 5,519 children. Till the 17th of July I carried on the duties of Civil Surgeon of Kotree, and officiated as Superintendent of Vaccination. I then went to the Thurr and Parkur districts, chiefly on account of an outbreak of cholera there. Major Tyrwhitt and I worked very hard there for weeks, and returned before the end of August. Since then I have examined the work of some Vaccinators in the Kurrachee Collectorate, and the state of vaccination in every talooka of the Hydrabad Collectorate and the Thurr and Parkur; altogether I have seen the work of about 17 Vaccinators and 7 Dispensaries. The quality of the recent work done by the Vaccinators is very good; that of the Dispensaries not quite so good, owing, I believe, to the difficulty in getting a sufficient number of children to operate upon weekly, and consequently an insufficient number of vesicles for the selection of lymph.

Correctness of Returns.

10. I was satisfied with the correctness of the records of all the Vaccinators, except three. Purbet Rai had a false entry of eight names; Chelaram (No. 142) of twenty names; and Jettah Mull (No. 77) failed in some instances to revisit the villages to ascertain the result of his operations. To save himself the trouble of going a second time to an out-of-the-way village he put them all down as successful: he should have entered those as doubtful. He admitted his fault when I found out three cases entered as successful instead of unsuccessful, otherwise his work was all that could be desired. The reason they dared make such false entries was that they imagined there work would not come under close supervision. From July to March I have inspected 16,629 children in 474 villages, and travelled 2,931 miles. Of course I could not have done this without the very greatest assistance.

Assistance from Civil Authorities.

The Commissioner in Sind, Sir William Merewether, Major Wallace, Acting Collector of Hydrabad, and Major Tyrwhitt, Political Superintendent of the Thurr and Parkur, frequently went around with me from village to village, and assisted me very materially in gathering and inspecting the children. The people were very much pleased to have such attention shown, and such interest taken, in having their children protected against small-pox; even the Mukhtiarkars begin to feel it is their duty to assist, in explaining to the people the benefits of vaccination, and to encourage them to bring their children to be vaccinated. I always, too, receive every assistance from all the Deputy Collectors. Mr. Tyndall, the Deputy Collector of Sehwan, helped me very materially in personally examining into some difficulties at Sehwan and Dadoo, and in having them removed. Sir William Merewether never missed an opportunity to inquire of the people the progress of vaccination amongst them, bestowing praise on the energetic, and rebuking

the apathetic in open Durbar. Mr. Moore, too, the Assistant Commissioner, very kindly gave me every permission and help in inpecting the school children. Speaking generally, the schoolboys are sons of Hindoos, and well marked with small-pox. For instance, at the Tharoosha School, I saw 73 children, of whom 14 only were vaccinated, 20 were unvaccinated, and 39, or upwards of half the children, were marked with small-pox. Now the 39 were the children of the wealthier Hindoos. I scarcely need add that at the Durbar held in Tharoosha, Sir William Merewether gave a "lecture on this disgraceful state of things." Vaccination progresses favourably now at Tharoosha.

Quality of Lymph.

11. The quality of the lymph has been perfectly good throughout the year, showing that the Vaccinators have been careful to extract the lymph at the proper time. The vesicles consequently are typical, and the areola in due time is formed; a slight pitting is left after the scab has fallen. For the last few months I have experienced much difficulty in supplying lymph to Dispensaries for want of capillary tubes. It happens at times that there may be no Vaccinator within many miles of a Dispensary so as to send a child with lymph there. I may here mention that people object very much to have lymph taken from the vesicles; but I think that a more liberal payment would generally overcome the majority of objections, the allowance now given, particularly in the Local Department, is insufficient.

Native Assistant Superintendents.

12. Hassah Mull, the Head Vaccinator, and Assoo Mull, one of the Vaccinators, have rendered me, in their capacity of Native Assistant Superintendents, very material assistance during the year. They are given a small allowance from the Local Funds, which enables them to carry on some supervision over the other Vaccinators, as well as carry on their own work. Hassah Mull has worked the district north of Hydrabad, and Assoo Mull the southern portion with the Thurr and Parkur. I had to dismiss two Vaccinators for neglect; they were both working in the Lár, and within a very few weeks twice lost their lymph. Two others left the Department within the year—Chandiram, on account of sickness, and Soomar had to return to his home owing to the death of his father. I must again mention the very great obligations I am under for the assistance and kindness shown me by Sir William Merewether, the Commissioner in Sind; Major Tyrwhitt and Major Wallace; for without such real and personal help as they have afforded me I should not have been able to accomplish one half of what I have done. My duties, instead of being laborious and irksome, have been comparatively light and pleasant.

Never seen any ill effects from Vaccination.

13. I have, both in England and here, examined and vaccinated many thousands of children, and have never observed any ill effects of any description arising from vaccination. I have seen cases where a vesicular eruption appeared like chicken-pox together with the vaccine vesicle, and disappeared with it: I have never seen any scrofulous or specific disease produced by vaccination.

KATTIAWAR CIRCLE.

Superintendent.—Surgeon E. R. BUTLER, M.D.

Establishment.—Eight Vaccinators under Government, thirty-seven under Native Chiefs, and 2 Native Assistant Superintendents.

Population, 1,582,468. Total cost, Rs. 13,706. Average cost of each successful case of vaccination, 4 annas and 4 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding those Unknown.
			Increase.	Decrease.		
Government.....	1868	10,523	.....	.....	9,905	.....
	1869-70	10,040	.....	483	9,426	96·8
Native Chiefs ...	1868	39,023	.....	.....	35,924	.....
	1869-70	44,939	5,916	.....	41,579	95·9

Increase.

I have again the pleasure to report an increase in the total number of vaccinations for the year 1869-70. The total number vaccinated is 54,067, showing an increase of 4,521 over the year 1868. The increase is due to an increased number of Native Chiefs' Vaccinators, and to the exertions of the Native Chiefs' Vaccinators alone. There is a falling off in the total number performed by the Government Vaccinators. The reason of this decrease is, I think, entirely attributable to the ravages of cholera; three of the Vaccinators had to strike work for some time in the rains on this account. The Chiefs' Vaccinators' returns would, no doubt, have shown a greater total but for the same reason. In one town nearly 400 children are said to have died of cholera.

2. In my Report for 1868, I stated that I computed 50,000 children was the maximum annual number, in proportion to the population, available for vaccination. I then forgot to allow for increase of population, which, the Political Agent informs me, is considerable for the last year or two. The population given is the same as for 1868, no census having been taken since.

General progress.

3. The general progress of vaccination is decidedly good. The last Chief (Mallia), who was unprovided with a Vaccinator, has lately entertained one. I think there is a tendency to employ too many by two or three Chiefs: they are emulous of one another in this respect. In fact, the number employed now by the Chiefs is sufficient to do the whole work in Kattiawar; and the Government Vaccinators, with the exception of two (who might be retained for the purpose of being sent at a moment's notice to any

place where small-pox may break out), should be removed. I have had more requests from heads of villages "to send Vaccinators" during the last year than I ever received before. Several instances have come before me of parents taking their children many miles to the nearest station, rather than wait for the annual visit of their own Vaccinator to operate on their children. I have received no complaints from Vaccinators of ill treatment or of serious impediments being place in their way when carrying on work,—a constant occurrence for some five or six years' back.

State of Lymph.

4. The state of lymph throughout the year has been generally good, especially in the Rajkote, Wankaneir, and Nowanuggur Talookas. Twelve fresh importations of lymph have been received during the year from England and different parts of the Bombay Presidency. Also some animal vaccine was sent from Bombay, which proved inert. All the English lymph proved active, all the Indian inert. The vesicles from the English lymph, after the second and third propagation, are reported large and characteristic. Generally, throughout the Circle, the vesicles I have seen have been small.

Number of Vaccinators.

5. One Vaccinator and 46 Assistant Vaccinators have been employed during the year, including two Native Chiefs' Superintendents and two Apprentices. Of these Assistant Vaccinators 44 have been on duty the whole year, one for nine months, and one for three months only. There has been no change in the number of the Government Vaccinators. Four additional have been appointed by the Chiefs,—three of them by the Thakore of Bhownuggur, and one by the Thakore of Mallia (there are two Mallias, one is a small talooka belonging to Joonaghur, the other the above mentioned).

Conduct of Vaccinators.

6. Vaccinator Runchore Munguldass (General No. 32) performs the office work, and travels about with the Superintendent. I cannot report too highly of his diligence and abilities. Collectively, I cannot report favourably of the Assistant Vaccinators, neither Government nor Chiefs.

Vaccinators of low Castes.

7. At the commencement of the year, the number of low caste people vaccinated was noticed to be very small. I received complaints from Bantwa and Porebunder that the Vaccinators of these two places refused to vaccinate Dhers and Bungies. This is a very old subject of contention with the Vaccinators. When I first came to Kattiawar many of them refused to vaccinate low-caste people; rather than do so, several of them resigned or suffered dismissal. On the present occasion, the difficulty has been overcome in three of the 1st class talookas, by each having appointed one man especially for this duty. The Porebunder and one of the Gondul Vaccinators resigned, two were discharged, and one suspended; the remainder have all given their word to vaccinate all castes, as was intended when they were first appointed. The high-caste people are as much to blame, if not even more so, than the Vaccinators in this matter: a great many of them refuse to allow the same Vaccinator to vaccinate their children, and the

low-caste children too. Besides the above changes, one Vaccinator, employed by the Chief of Jhusdun, died.

Vaccinators dissatisfied with their pay.

8. Most of the Vaccinators are dissatisfied with their pay,—the Government men on account of the grain batta, which was given to them and then taken away, and which they are now anxiously expecting to receive in the shape of travelling allowance, as was recommended last year. The Native Chiefs' Vaccinators are dissatisfied, because most of them get less than the Government men, and because others get as much as Rs.20 and Rs. 25 a month.—(*Vide* Form **A**, Statement No. III). I think good pay is the one thing wanted to make the Vaccinators thoroughly efficient, and if they are to get an increase, the travelling allowance would be the best way of giving it. Where responsibility is great, the pay should be in accordance. I cannot finish this subject more appropriately than by quoting a passage from Dr. Colah's Report for 1868 :—" Besides mere mechanical skill, other qualities are needed in a Vaccinator. He must, to a certain extent, be an educated man, possessed of a moral consciousness that he has to do a work, upon the proper performance of which, will, in a great measure, depend the life of a human being ; and he must also possess an unusual amount of patience and energy to quietly work his way over the prejudices of the people, and the tact to gain their confidence. With industrious and energetic habits, a conciliatory disposition is essential. It is not likely that men possessed of such qualities could be found to serve for very low wages."

Practicability of improvement.

9. In my last year's report I entered most fully into the subject of improving the system of vaccination. This year, when the Superintendent General of Vaccination was at Rajkote, he examined most carefully into all its bearings. I am afraid, under the present state of the organization of the Vaccination Department in Kattiawar, improvement is impracticable, although there is plenty of room for it.

Small-pox.

10. A few cases of small-pox have been reported from several talookas at different times ; mild in form and not of an epidemic nature, most of them were reported in the months of of January, February, and March, 1870. I have seen and heard of many cases in the Bujjana, Veerungaum, and Patree Talookas ; the two last are in the Ahmedabad Zillah, but Kattiawar villages are round and about them. The cases I saw were confined to wandering Marwaree children.

11. Inoculation is not carried on as a trade in Kattiawar. I sometimes hear of isolated cases, but they have been the work of itinerant Inoculators passing through the peninsula, and not of it.

False Returns.

12. I am sorry to report that I have proved home to two men several cases of false returns, both Chiefs' Vaccinators,—one man was discharged ; the other forgiven, his work in other respects being so eminently good. The discharged man is one of those before men-

tioned belonging to Mangrole. Besides the above mentioned false returns, I found several other suspicious cases, but could not prove them.

Weekly Returns.

13. The weekly returns are decidedly a good institution; independent of the information they give to those in authority over the different stations, they have also been the means of compelling the Vaccinators to keep up a continuous supply of lymph. Before they were introduced the Vaccinators were constantly allowing their lymph to lapse, often causing a break of weeks. I seldom get demands now for fresh lymph on this account.

Chiefs all give assistance.

14. The Chiefs, one and all, have given me great assistance, and all those I have visited have been most courteous.

Peons paid by Chiefs.

15. Previous to 1869-70 the Peons on duty with the Superintendent and Government Vaccinators were paid by Imperial Local Funds, (tribute?); now they are paid by the Chiefs. This is one reason why the cost to Government of the Vaccination establishment is less for 1869-70 than formerly.

Tour.

16. The employment return shows most of the particulars connected with my tour. In April and May I was in Rajkote, doing all the duty, both Civil and Military. June, July August, September, and part of October, I was also in camp, engaged with my own Civil duties there. I was not able to travel much in October and November on account of the late rains: the roads were so heavy in some places I could only get over two or three koss a day. The locusts also severely interfered with my inspection duties; wherever they settled the people seemed fascinated by them; and as long as they remained it was utterly impossible to collect the children. During the year I have visited every talooka except Jafferabad, Limree, and Jhusdun, and inspected all the Vaccinators' work except seven. From March 1869 to March 1870 I have visited every talooka, save one, and inspected every Vaccinators' work except one.

Never seen a case of Syphilis traceable to Vaccination.

17. I have now inspected 40,000 children, and have never seen a case of syphilis that could be traced to vaccination as the way or means by which it was introduced.

Work of Vaccinators.

18. In reference to the Vaccinators' work not one of them had done perfectly satisfactory work, there was some fault or another: one had vaccinated very few, another had done it very carelessly,—resulting in bad lymph, or small vesicles, or both; others had made false returns.—(See conduct of Vaccinators).

Constant supervision the greatest means of obtaining good results.

19. I have been upwards of nine years doing duty as a Superintendent of Vaccination; and the more I see of its successful working, the more confident I am that constant and incessant practical supervision is one, if not the greatest, means to that end. During the last year our travel-

ling allowance has been curtailed by nearly one half, I respectfully submit that the present rate of travelling allowance to Superintendents does not pay much more than half the travelling expenses, and that, necessarily, the inspection duties, if properly performed, must be so at the expense of the Superintendents' pay as well as his insufficient travelling allowance.

Dispensary Vaccinations.

20. The Dispensary Vaccinations are very few in number, because each village, where the Dispensaries are situated, has its own (Chief's) Vaccinator. The Hospital Assistants at the Dispensaries simply vaccinate the children of the Government servants at the stations, and any chance case that may be an inmate of the Dispensary Hospital.

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon J. T. Welsh, M.D.

Establishment.—Five Vaccinators under Government and ten under Native Chiefs.

Population, 360,000. Total cost, Rs. 4,262. Average cost of each successful case of vaccination, 3 annas and 10 pies.

Establishment.	Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
			Increase.	Decrease.		
Government, Punch Mahals	1868	7,507	.....	.....	7,094	95·5
	1869-70	9,476	1,969	.....	8,975	96·7
Native Chiefs	1868	7,083	.....	.....	6,649	96·0
	1869-70	10,166	3,083	.....	9,192	94·9

Increase.

The increase in the Punch Mahals during the past, as compared with the preceding year, is accounted for chiefly by the earnest and diligent manner in which the men, stimulated by the changes made in the rank and pay of their appointments, have carried on their work. In previous years all five men were of the same rank—Assistant Vaccinators—and drew the same pay, Rs. 18 per month; but in the beginning of the present year a change was made: one of the Assistants, Balajee Purbhooram (General No. 254) was promoted to the rank of Vaccinator on a monthly pay of Rs. 24; two retained their old rank; and the remaining two were reduced to the rank of Apprentice Vaccinator, with a loss of Rs. 4 each monthly. Since then the aim of the Vaccinator has been to prove that he was worthy of the preference shown him; and the others have been told that future promotions will not be regulated entirely by length of service. They are each, in their respective ranks, endeavouring to establish a claim for preferment. The increase is also, to a certain extent, due to greater assistance received from the village officials, and the decreasing opposition of the people to the operation.

For several years Tulaties in the Punch Mahals, under instructions from the Agent to the Governor, have been required to prepare lists of the unvaccinated children in their villages for the use of the Vaccinators. These lists, however, are often so very imperfect as to be almost useless; and the Vaccinators not unfrequently neglect to apply for them, and depend solely on the exertions of themselves and Peons. Village registers have not as yet been of any advantage, as Tulaties, as a rule, neglected to keep the vaccination statistics.

2. The increase in the Native States is principally due to the appointment of three additional Vaccinators in the month of November. After deducting the vaccinations (1,671) performed by these men, there is still an increase of 1,412, resulting from the exertions of all the Assistants, with the exception of the two men in Rajpeepla, in which district there has been a decrease in consequence of the sickness of one of the men, and the non-receipt of the monthly returns for March.

Area of Circle.

3. In the annual Report for 1868 the area of the Circle, excluding the Sunkeira Mewas, was recorded at 14,001 square miles. Since then the Native State of Barrea has been surveyed, and ascertained to be little more than half the size it was supposed to be; and it is now believed that the area of Loonawara is only about 800 instead of 1,736 square miles, as previously supposed. Making allowance for these corrections, the area of the whole Circle is now estimated at 12,725 square miles; but if all the Native States were surveyed, this estimate would probably be found much too high.

Population.

4. The population is estimated at 360,000, which, however, must be very much below the mark, as the population of the Punch Mahals alone is about 169,000, or 100 to the square mile. From a census of the Native State of Bareea, recently taken, it would appear that the population is about 57 to the square mile; so, taking the area of all the Native States at 11,050 square miles, and calculating the population at that rate, it would be 629,850, which added to the population of the Mahals would make a total of 798,850.

Number of Vaccinators.

5. No change has been made in the number of Government Vaccinators. In October 1869, Mr. Propert offered, in the event of my considering the present number of Government Vaccinators insufficient, to recommend the appointment of stationary Vaccinators, to be paid from the Local Funds, and maintained solely for the benefit of the Kusba towns. I could not take advantage of this offer, as the towns are small, and the itinerant Vaccinators must reside and carry on their work in them during the rains; but I suggested that two additional itinerant Vaccinators should be appointed by the Local Funds' Committee for duty in Godra and Dohud. My motive for making this suggestion, which was not carried into effect, was simply to increase the number of infantile vaccinations by reducing the area of the Vaccinators' districts. At present the average area of the five districts is only 335 square miles, and had additional men been sanctioned there would not have been any increase in the total number of primary vaccinations after the first year of their appointment.

6. In the Native States three additional Vaccinators were at work during the last four or five months of the year. Formerly one man used to work in Loonawara and Ballasinore, and draw pay from both States in equal portions; but in October last, Major Barton, after considerable trouble, succeeded in inducing the Babee of Ballasinore to entertain a Vaccinator for his State alone. The Rajahs of Loonawara and Barrea are both minors; and Government in Resolution No. 3380, dated 19th October 1869, sanctioned the appointment of a second Vaccinator in each of these States. Excluding Rajpeepla and Chota Oodeypoor, the average area of each Vaccinator's district in the Native States is now about 500 square miles. Rajpeepla is no less than 4,500 square miles, but the Rajah will not sanction more than two Vaccinators. He has been asked to do so oftener than once, but he has always declined; and on the last occasion he expressed a desire that both the present men should be dismissed, and one man appointed in their stead. There is only one Vaccinator in Chota Oodeypoor, the area of which is said to be 3,000 square miles.

Age.

7. I have all along paid great attention to the subject of age, and I now believe that the returns are as accurate in that respect as it is possible to get them. It is extremely difficult to ascertain the ages correctly, as the parents can give little information, and the Vaccinators have almost always to judge solely from the appearance of the children, many of whom are vaccinated when about twelve months old. In 1868 the percentage of vaccinations under one year of age was in the Punch Mahals 42, and in the Native States 32; during the past year the figures are the same in the Punch Mahals, and in the Native States 28. In this Circle there is now little or no objection made to infantile vaccination; and in the neighbourhood of the Kusba towns, where the Vaccinators reside during the rains of each year, almost all the operations are performed during infancy. Of the children inspected by me while on tour, the percentage under one year was Punch Mahals 42·2, and Native States 33·4. Adult vaccination has never been practised in this Circle; in the months of November, December, January, and February, while inspecting the children, I took a note of the number vaccinated above 10 years of age, and found it to be less than one per cent. of the whole.

Sex.

8. Of the total vaccinations 50·3 per cent. were males and 49·7 per cent. females. In 1868 the percentage of females was 48·4. These figures are, I believe, correct.

Caste.

9. As regards caste the percentages are as follows:—Christians 0·, Hindoos 93·9, Mussulmans 4·0, Parsees 0·, and other castes 1·9. Caste does not affect vaccination in any way. Christians and Parsees are few and far between in this Circle.

Per cent. of Success.

10. According to the returns 92·5 per cent. of the operations were successful, 4·0 per cent. unsuccessful, and the remainder doubtful. Of the children inspected by me, 93 per cent. had been successfully vaccinated, and the majority of them had three good cicatrices on each arm.

11. The lymph throughout the year has generally been good. Since last annual report I have forwarded 378 tubes, charged with fresh lpmph, to the Local Superintendent of Vaccination, Bombay, 6 to the Superintendent of the Kattiawar Circle, and 14 to the Superintendent of the Central Circle. In November I received lymph in 3 tubes from the Superintendent of the Central Circle, which was used with success; and in December I received 3 tubes and 5 points, charged with English lymph, from the Superintendent General of Vaccination: the points failed, but the tube lymph proved successful, and on second transmission large and characteristic vesicles were obtained. I also received 4 tubes charged with animal vaccine lymph from the Local Superintendent of Vaccination, Bombay, in February last, which, on trial, proved quite inert.

Lymph.

12. During the month of April 8 persons were attacked with small-pox in Oomerpara, Jhalode, and 1 died; and in the village of Wassunya, Halole, of 19 persons attacked with the same disease in September, 3 died. The Vaccinators lost no time in vaccinating the unprotected in these villages, and the disease did not spread. These are the only cases that occurred in the Punch Mahals throughout the year. In the Native States small-pox was rather more prevalent; cases occurred in Soonth, Veerpoor, and Barrea, in March 1869, and in Sunkeira Mewas and Rajpeepla during the months of May, June, and July. I have been unable to obtain particulars as to these outbreaks, but believe that the attacks were neither numerous nor fatal. In April, May, and June, cholera was more or less epidemic in all parts of the Circle.

Small-pox.

13. Inoculation is not practised in this Circle.

14. Since January 1869 I have inspected the work of all the Vaccinators (many of them oftener than once) with the exception of two of the three men appointed in November last. The method of inspection was the same as that carried out by me during the past four years; viz., at each village visited, on the children being collected, to call the name of each vaccinated child from the Vaccinators' monthly returns, and, on the child being brought before me, to test the accuracy of the return as regards sex, age, and result. As the children were examined, they were passed over to a Peon, who kept them separate from the others until all the names had been called, the arms of those present inspected, and the absence of others accounted for by the Patel, who was invariably present. In this way 315 villages were visited, and 5,630 children inspected. In addition, I also inspected the arms of 400 children whose names were not called from the returns. As a general rule, I first visited the head-quarters of the Vaccinator whose work I was about to test, and after examining his work there, made a second camp in his district, where I remained for some days visiting the villages in the neighbourhood, and thus got a very fair idea as to the quality of his work and the accuracy of his returns. The Vaccinator was usually present at all inspections, as I accompanied him his lymph days, and he came with me on the days he had none. On 1st January 1869, I was in the Native State of Barrea with Assistant Vaccinator

Tour.

Mahasook Kuddoojee, who has now been working in that district for two years with great success. His lymph and the resulting cicatrices were decidedly good; and the only unsatisfactory part of the work was that very few of the operations performed were on children under one year of age. I have no doubt that an improvement will soon take place in that respect, as, has been already stated, there are now two men at work in Barrea. On the 4th January I returned to my head-quarters, Dohud, where I remained until the 28th, inspecting the work of Assistant Vaccinator Jaithalal Gunputram (General No. 253), who is a very intelligent, hard working man. When I am in Dohud he does the Guzerathi work of the office in addition to his ordinary duties, and when I am on tour I place a substitute in his appointment, and take him with me as Carkoon on increased pay. The manner in which he has all along performed his various duties has been most satisfactory. On the 28th I camped at Ruliatee, in the Jhalode districts, and commenced inspecting the work of Apprentice Vaccinator Pursotum Duyaram (General No. 279). His district is rather more difficult to work in than the others, but, notwithstanding that, he always manages to perform a creditable number of operations, and his vesicles and cicatrices are generally very good. I next went to Soonth, where Assistant Vaccinator Sobharam Sewuckram has been employed since May 1867. At first he had great difficulty in inducing the people to submit their children for vaccination, as the operation was new to them, no Vaccinator having been there for many years before, and a fair start was not made until I visited the district in November of that year. Since that time considerable progress has been made,—in 1867, 99 children were vaccinated; in 1868, 619 children; and during the year under review the operations amounted to 1,136. The quality of the work was very fair indeed. As this Vaccinator is partly paid by the Thakore of Kuddana, he carries on work in that State for three months each year; so on the 16th February I left Soonth for Kuddana, where I remained for four days and inspected 25 villages. The Vaccinator had met with much less opposition in Kuddana than in Soonth, which is partly accounted for by the fact that the Thakore not only assisted him in many ways, such as supplying him with a Peon, but, by way of example, sent his only son to the bazaar to be vaccinated in public. The Soonth Durbar gave little assistance, and that little grudgingly. On the 21st February I arrived at Loonawara, where I inspected the work of Assistant Vaccinator Chuggun Roopchund, who at that time only carried on operations for six months of each year in Loonawara, the remainder of the year being devoted to Ballasinore. On the 2nd March I removed my camp to Wordree, to enable me to visit some of the Ballasinore villages. The past work of this Vaccinator was good and his returns correct, but his vesicles and recent cicatrices, though well formed, were unusually small. Fresh lymph was therefore introduced. On the 8th I started on my return journey, travelling across Godra to Dohud, where I arrived on the 14th. On my way I inspected the work of Vaccinator Balajee Purbhooram (General No. 254) in nine villages, and, as has invariable been the case, found it everything that could be desired.

15. I resumed my tour in November, during which month I again inspected the work of Assistant Vaccinator Jaithalal Gunputram (General No. 253) in Dohud,

and Vaccinator Balajee Purbhooram (General No. 254) in Godra, and also the work of Assistant Vaccinator Mahasunker Cassiram (General No. 255) in Kalole, and Apprentice Vaccinator Dajee Kaiwulram (General No. 319) in Halole. The first three men have been in the Department ever since the formation of this Circle, and it is sufficient to say that their work has all along been thoroughly good. General No. 319 had at that time only been employed for about a year, and I was highly satisfied with the success he had met with. I inspected 31 of his villages, and always found the vesicles and cicatrices large and well formed. I next proceeded to Chota Oodeypoor, and, as usual, felt this to be the least pleasing part of my tour. This State is the only part of the Circle in which the progress of vaccination has not been satisfactory: the Vaccinator gets little or no assistance from the authorities, and is, therefore, unable to overcome the opposition of the people. In 1866 the vaccinations amounted to 389, in 1867 to 535, in 1868 to 484, and during the past year to 706. This increase is so far satisfactory; but the quality of the work was indifferent, the percentage of success, according to the Vaccinator's returns, only amounting to 84·3, which, however, is too high, as many unsuccessful operations had been recorded as successful. For this I heavily fined the Vaccinator; but I could scarcely blame him for his want of success, as I knew he was both able and willing to work well, if the people would only give him a fair chance. He has to contend with many difficulties, which, I believe, will be overcome in course of time by perseverance. During previous years vaccination had chiefly been carried on in the neighbourhood of the Kusba town; but as the town is a small one, and the surrounding country decidedly jungly and thinly populated, I, on the occasion of my visit in 1868, directed the Vaccinator to take his lymph to Wasna, in the southern part of the State, the country there appearing more populous and the people more civilized. After inspecting Wasna and the surrounding villages, I took my camp to Boodaleoo, where I only remained for one night, as I found that, instead of being an aid to the Vaccinator, I was a hinderance. There was lymph in two villages, Boodaleoo and Timbroo, but I did not see it, as the people left their villages on my approach, and remained absent during the 24 hours I was encamped there. The Patel undertook to bring the people in; but as he neither did so, nor returned himself, I reported the circumstance to the Political Agent. Before leaving the Vaccinator, I vaccinated several children in Wasna with tube lymph. My next camp was at Naswaree, in the Sunkeira Mewas, which has only been a vaccination district since September 1868. The Vaccinator, Wishoonath Oomyasunker, was very ill for about a month, but, notwithstanding that, and the fact of the district being a new one, he succeeded in vaccinating 651 children. The people do not readily accept his services, and he is therefore unable to travel over his district as rapidly as he otherwise would. I inspected 14 of his villages; the work, though not as good as that of the more experienced Vaccinators, was creditable. His percentage of success was only 76·6, but his returns were correct. On the 14th December I started for Rajpeepla, where there are two Vaccinators, Fuckeer Mohamed Mullangbhoie and Heeralal Wishoonath, who have been employed in the same State for many years, and have always done very good work. The first mentioned man suffered

severely from illness, and was able to do little or nothing for nearly three months. The returns of both were accurate, their lymph good, and cicatrices large and well formed. This satisfactory state of affairs might be looked for, as Rajpeepla, or, at least, the part of it in which the Vaccinators usually work, is populous; the people, comparatively speaking, highly civilized; and vaccination is carried on without difficulty. As an example of this, I may mention that on visiting one of the villages—a large one—I found that the Patel had collected all the unprotected children—about 50 in number, and varying in age from one to two years—for the purpose of having them vaccinated. In most of the Native States it would have taken a month to collect that number of children.

16. Towards the end of December I met the Superintendent General of Vaccination at Juggreea, and accompanied him through Rajpeepla, Sunkaira Mewas, Halole, Kalole, to Godra, and re-inspected the work of the six Assistant Vaccinators in these districts.

17. From the 12th to the 17th January I travelled through Barrea to Dohud, again inspecting the work of Assistant Vaccinator Mahasook Kuddojee, and also the work of Jebhae Kashiram, one of the Assistants appointed in November. Both had been working well and diligently with very good lymph, and the cicatrices were large and characteristic in appearance. I remained at head-quarters until the 30th, and from then till the 20th February travelled through the Dohud and Jhalode districts, re-inspecting the work of General Nos. 253 and 279. Nothing could be better than the work of the former; and that of the latter was also decidedly good, but I regret to say there were some errors in his returns. In three different villages I found that a young child had been unsuccessfully vaccinated and entered as a successful vaccination. I have constantly endeavoured to detect this kind of error in the returns, but had never previously met with it. During this visit I made a careful inspection of his work in 39 villages, and found everything correct, with the exception of these three entries. He is a good operator and knows his district well; and as he could have no motive in only making three untruthful entries, I thought they were entered by mistake, and let him off with a fine. During my previous visit I accompanied the Vaccinator to the village of Gurraroo, where the people had, year after year, refused to have their children vaccinated, and after some trouble succeeded in overcoming their scruples. On this occasion I found that all the children, 75 in number, had been vaccinated.

Prospects of Vaccination.

18. In the Punch Mahals, I believe, there will be a decrease in the number of primary vaccinations next year, because the Vaccinators during the past four years have on an average vaccinated yearly 4½ per cent. of the entire population, and thus cleared off most of the arrears of work. It is true that few adults have been vaccinated, but, as the great majority have suffered at some time or other from small-pox, vaccination performed on them will come under the heading of re-vaccination. In the Native States steady progress has been made for four years, and next year there will be a

further increase in the amount of work done. With other two or three Vaccinators, I believe vaccination in the Native States would soon be as thorough as it is in the Punch Mahals.

Never saw a case of Syphilis resulting from impure Lymph.

19. I have altogether inspected the arms of 16,573 children during the four years I have held my present appointment, and have never seen a case of syphilis resulting from the use of impure lymph.

PRESIDENCY CIRCLE.

Local Superintendent.—Sub-Assistant Surgeon Anunta Chandroba.

Establishment.—Six Vaccinators (Government).

Population 816,562. Total cost, Rs. 6,730. Average cost of each successful vaccination, 1 rupee 1 anna and 11 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Successful.
		Increase.	Decrease.		
1868	10,757	.....	.....	8,149	83·7
1869-70	9,222	.....	1,535	6,002	84·0

Causes of Decrease.

The total number vaccinated during the year under report amounted to 9,222, being 1,535 less than the number operated upon during the preceding year. The great prevalence of small-pox, measles, and fevers amongst the children could not but cause such a considerable lessening in the number vaccinated. Small-pox alone carried away some 1,725 in the course of the year, and must have protected a great many more. It has been found from past experience that an outbreak of small-pox has been the signal for hundreds to flock to the vaccine stations, and the numbers vaccinated bore a direct ratio to the extent and severity of the epidemic. This being the case, the total number vaccinated during the past year should have at least equalled, if not exceeded, the number for 1868, seeing that the epidemic was both extensive and severe. This, I am sure, would have been the case, had it not been for circumstances which, from their very nature, could not but materially influence the result. Whilst small-pox was decimating the children in all directions, measles and fever, both of a very severe type, were not less active. The deaths from the former amounted to 477; the latter carried away from amongst the children alone, ranging from seven months to four years, no less than 1,316 individuals. So, what with small-pox, measles, and fevers, there was scarcely time, in many instances, to have recourse to vaccination. Small-pox raged most violently during the first half of the year—at a time, too, when we were

most unfortunately short of lymph, which at no time was overabundant. At times, as many as a hundred and fifty or two hundred have at once attended at the vaccinating stations, applying for the operation. These required, at the least, from 10 to 15 vaccinifers, and we could scarcely command two or three. To give, therefore, the bare chance of an escape, we were compelled, however reluctantly, by the earnest entreaties of the anxious parents, to use good, bad, and indifferent lymph, and we always warned them of the extreme likelihood of the operation failing when the lymph used was not of first-rate quality; then the lymph received in hermetically sealed capillary tubes from the different Superintendents of Vaccination from the Mofussil was used, and in the majority of instances proved unsuccessful. A drowning man catches at a straw; and our condition, and that of the applicants for vaccination, was no better. With all our shifts, it now and again happened that some persons had to go away unvaccinated; and some, arriving too late at the stations, had even to come two or three successive days before they could be vaccinated. There can be no doubt that had the Vaccine Department always had fresh, and good, lymph at command, many more would have been vaccinated, and many thus saved from falling victims to that fell, but easily preventible, disease and scourge of humanity—small-pox. But this state is now changed by the introduction of animal vaccination, and we shall henceforth be always in a position to have an abundant and independent supply of fresh lymph from the cow direct, and be able to vaccinate any number that may apply—at any rate during some days of the week—all the year round; except, indeed, the Government, the Municipality, and the generous, philanthropic, and charitably-disposed millionaires of this place become so indifferent to the cause of vaccination as to withdraw their support from it altogether.

Sex, Caste, and Age.

2. Of the total vaccinated, 5,192 were males and 4,030 females: 6,104 Hindoos, 1,336 Mahomedans, 805 Christians, 833 Parsees, and 144 of other castes, chiefly Jews; 3,528 were under and 5,694 above one year of age.

Percentage of Success.

3. Of the total operations performed, 6,002, or a percentage of 84·0, were successful; 1,141 unsuccessful, and in 2,079 the results could either be not ascertained, or were of a doubtful nature. Amongst the latter are included many of the cases of re-vaccination, for the most part of the children to be admitted into the European schools—the rules of these Institutions requiring that every child be vaccinated, or re-vaccinated, as the case may be, before the pupil is admitted.

Introduction of Animal Vaccine.

4. The most important and interesting feature of the vaccine operations during the past year has been the successful establishment, by Dr. Blanc, Superintendent of Vaccination, Western Circle, of animal vaccination in Bombay. It was on the 19th of December 1869 that Dr. Blanc inoculated the first heifer, belonging to Superintendent Tighe, of the Bombay Police, who obligingly allowed us the use of it for the purpose, with animal vaccine lymph brought with him from England, in the presence of the Superin-

tendent General of Vaccination and myself. The lymph had remained in his possession for a considerable period (three months I think), and from previous experience apprehensions were entertained that the operation might prove a failure. Fortunately, however, it succeeded admirably, and Dr. Blanc was enabled to inoculate a fresh heifer, with the lymph thus obtained from the first, on the 15th of the month, the seventh day after the first operation. This also proved completely successful. He then successively inoculated two or three more heifers, and successfully vaccinated many children with lymph direct from the inoculated heifers; and after thus establishing an excellent supply of animal vaccine virus, left Bombay to join his appointment. After him, the task of carrying on and keeping up animal vaccination in Bombay naturally fell to my lot. I must confess that I had considerable misgivings as to my ability to perform the task satisfactorily. I was but a novice, and my men, equally ignorant of the subject, were awkward in their assistance, and the necessary appliances and instruments were wanting. We had to be contented with, and make use of, the awkward appliances we could improvise from the imperfect materials at our command. All this could not fail to cost me many an anxious day; and it was not till after I had successfully inoculated four or five heifers, and vaccinated with equal success many children with the lymph obtained therefrom, that I became reassured. I had, however, difficulties of another and more potent kind to contend against, and, what is worse, difficulties over which I could have no control whatsoever. The cow being an animal held in high religious veneration by the mass of the Hindoos, few could be induced to give us the use of their heifers for inoculating purposes. Some did, indeed, lend us their calves for a money consideration to the extent of some two or three rupees a head, but the number of such was very small indeed—there being only five that were thus paid for. Heifers, most of them in an excellent condition, and thoroughly clean, are provokingly numerous in all parts of the Island; but beyond the five above referred to, none could be induced to give us the use of their calves, even for the consideration of Rs. 5 per head, besides feeding them during the time they should remain with us. Nine more heifers only could we procure from friends and other obliging acquaintances—of course free of any charges; and in some even free of any feeding charges, the heifer having remained with the owners, and sent to us, when the lymph was mature enough for use, which was generally on the sixth day. I thus found that the supply of heifers from friends and acquaintances was too precarious to be depended on; nor were any procurable for a money consideration either, owing to the religious veneration in which the cows and heifers were held generally by the people. It was, however, absolutely necessary for our purposes to obtain a regular supply of heifers, without which animal vaccination could not be established on a firm footing. To buy heifers as required was apparently the only course left to us, but, unfortunately, there was no mart for heifers in Bombay. Under these circumstances, the only persons who are in a position to supply us with heifers, if disposed even to do so, are the butchers. I therefore lost no time in applying to them for the necessary assistance, and one did actually consent to provide us with a heifer every sixth day for the consideration of Rs. 5 per head, and the feeding of the animal during the time we should detain it. By the time, however, that the necessary sanction from the Superintendent General of Vacci-

nation was obtained to enter into a contract with a butcher on the above terms, as proposed by himself, he had completely changed his mind, and absolutely refused to abide by his word, saying that the arrangement would put him to great loss: for the carriage of the heifer from Bandora to Bombay and back alone would more than swallow up the sum bargained for. Altogether, he did not seem at all willing to enter into any sort of contract with us for the supply of heifers. As a matter of obligation, however, he said he would give us the use of his calves at Bandora; but, even then, would expect Rs. 5 as remuneration. This offer was, of course, useless, as we required the calves in Bombay. There were only two courses for us to take under the circumstances; either to defray all the expenses attendant upon getting the heifers from Bandora and taking them back, together with Rs. 5 for the loan of each, to be paid to the butcher, or to buy calves for ourselves. Unfortunately, as stated before, there being no mart for heifers in Bombay, no heifer fit for our use, or, indeed, of any kind, could be procured here. To buy them at Bandora, where alone they could be found, would entail the expenses of taking the animal all the way to Bombay. Altogether, the thing appeared to be very difficult of accomplishment. I was, however, determined, at whatever cost, to keep up animal vaccination, for some short period at least, and then represent the matter to the superior authorities. Whilst thinking as to what steps I should take in the matter, it occurred to me that Dr. Hewlett, the Health Officer for the City of Bombay, and the Municipal Commissioner, who, both taking great interest in the progress of vaccination, and have the butchers under their control, would be able to render me all the necessary assistance by using their influence with them. I accordingly waited upon Dr. Hewlett, gave him a full account of what we had done about animal vaccination, and represented to him the difficulties we were labouring under, and requested him to try to help us out of them. Dr. Hewlett kindly gave a patient ear to all I had to say, expressed his gratification at hearing that animal vaccination had proved such a success here, and showed his concern at our difficulties. He said that he would be only too glad to render any assistance that lay in his power, but that, circumstanced as he was, he did not clearly see his way to be of any use in procuring heifers. To induce the butchers to give us the loan of their heifers would be difficult, if not impossible, seeing that he could not permit them to be slaughtered for some three or four weeks after the operation. He might try and see if Mr. Crawford, Municipal Commissioner, could not be prevailed upon to sanction the purchase of heifers for our use and the feeding of them for a month from the Municipal funds, and thereafter sell them for whatever they might fetch. On inquiring, he learnt from the Superintendent of Bazaars that the price of each heifer would be about Rs. 15, and the feeding would cost some 7½ rupees more. We wanted five heifers at least every month, so the Municipality should have to incur on our account an expenditure of Rs. 112-8-0 per month. Of this a portion, and a large portion, would ultimately be recovered by the sale of the animals. Dr. Hewlett, suiting his action to his words, wrote at once an official letter to Mr. Crawford, representing to him the whole case at it exactly stood, and strongly recommended that the Municipality would do well in giving the assistance so urgently required; the more so as it was calculated to further very materially the cause of vac-

cination generally, and as regards the city of Bombay, particularly, and that it would also prove very valuable in carrying out the provisions of the proposed Vaccination Act. Mr. Crawford was pleased to give a prompt response by at once sanctioning the proposal as an experiment. Animal vaccination was thus, for a time at least, secured on a reliable basis. We received in all some fourteen heifers from the Municipality, of whom two had to be returned as useless, on account of their suffering from some eruption of the skin of the part to be operated upon. The inoculation in some of the last heifers supplied by the Municipality proved unsuccessful. A spurious sort of eruption did follow the operation; but heifers inoculated, and children vaccinated with the lymph obtained from them both proved unsuccessful, thus materially increasing the total of failures for the year. Though the supply of heifers from the Municipality rendered us perfectly independent, I never slackened my exertions in procuring heifers from private sources, either gratis or for a money consideration; and, as the result proved, it was as well that I did so, for when several of the Municipal heifers failed, not a single heifer of the fourteen that I obtained from private sources proved unsuccessful. I was thus enabled to keep our animal vaccine virus in an excellent condition up to the end of the year. From the 9th December 1869 to the 31st March 1870, there were in all twenty heifers inoculated. Of these fourteen belonged to private individuals, five of which only were paid for—three at Rs. 2 each, and two at Rs. 3. In every one of them the operation was perfectly successful, and children vaccinated therefrom gave very satisfactory results. The remaining twelve were supplied by the Municipality, of which several had failed. What could be the cause of this considerable amount of failure in the animals supplied by the Municipality I am not in a position satisfactorily to answer; some of them had an eruption on the skin, and some had urticarious blebs at the time of the removal of the hair from the abdomen near the udder. Animal vaccination is thus an established fact in Bombay. It has proved as completely successful as it has ever been known to do in other parts of the world, nor can it be called a mere experiment: for that cannot come under the category of an experiment which is acknowledged as an established national institution by some of the greatest and most enlightened States of Europe. Animal vaccination, I must repeat, is now well established in Bombay. It has proved successful beyond the most sanguine expectations entertained of it. The operations performed on human subjects with animal vaccine lymph have been very successful, and the resulting vesicles in every way perfect. During a professional career of some twenty years I must have vaccinated thousands and thousands of persons, and have carefully observed the results in many, and in not a few the vesicles were really very good; but never had I witnessed such splendid results before as were obtained from the use of animal vaccine lymph—the vesicles invariably of the genuine Jennerian type, large and well developed, and this even after the most minute puncture in the skin; the skin around the vesicle to a considerable extent swollen; the areola more distinct and extensive; the constitutional sympathy more pronounced; the course ran extremely regular; the scab, if undisturbed, more massive and well formed; and a compact and condensed store of excellent lymph for further operations in the vesicles and the scar, left after the separation of the scab, having all the qualities of a characteristic vaccine

vesicle cicatrice. There were, however, not wanting cases in which the vesicles were rather late in appearing—so many, sometimes, as two or even three days; but once formed, the course of the vesicles afterwards was perfectly regular, and all the distinctive characters well marked. It appeared as if the germinal matter contained in the inserted lymph, though effective, was not sufficiently developed or advanced to cause the appearance of the vesicles on the fourth day, but required two or three days time to attain to that state. During the time that animal vaccination has been carried on, I have had ample opportunities of testing the effectiveness of vaccination performed with animal vaccine virus in protecting the system from a further vaccination with human lymph, and, therefore, from an attack of small-pox. In some successful cases of primary vaccination with animal lymph—on the fifth day of the operation, when the vesicles had made their appearance just the day previous—more punctures were made, and human vaccine lymph inserted therein. Vesicles made their appearance at the sites of all the later punctures in the course of twenty-four or thirty-six hours, and afterwards ran their course with the previously developed vesicles; in every respect, as if they were all formed at the same time; the later vesicles, resembling these first ones in every characteristic save size, being considerably smaller, as if they had not time enough to attain their usual size, thus showing that the system was already brought under the influence of the lymph first used; but the necessary changes in the system were not completed, and time was still left for the later inserted lymph to act. The same thing happened when the order of the lymph was reversed: human lymph being used first, and the animal virus on the fifth day. In the same way, cross experiments were made on the eighth day of the operation. Generally, no effects where produced. In some a small, raised, red spot did make its appearance at the seat of the puncture; but this always faded away in the course of twenty-four or forty-eight hours, leaving the bare marks of the punctures. Animal vaccination has, in my humble opinion, proved itself to be a perfect success in Bombay; and, as such, well worthy the fullest patronage of both the Government, the Municipality, and the public at large. It is a matter for congratulation that the whole community of Bombay has taken to animal vaccination very kindly. At the commencement there were a few objecting voices, strange to say, from the European quarters chiefly. Two or three Parsees and one Jewess objected to get their children vaccinated with animal lymph. This feeling of distrust has now quite disappeared, and one and all now ask for animal lymph in preference to that obtained from the human subject. At the commencement I had great apprehensions that the Bunyas and Bhattias would, on religious grounds, raise a voice of opposition to animal vaccination, powerful in proportion to the extent of their community, and on account of their containing very many individuals holding a high and influential position. It is, however, gratifying that, instead of opposing it, they were some of the first to accept it. Animal vaccination, whatever else it has achieved or left undone, has proved a perfect boon to Bombay in one particular. The chief burden of our reports, year after year, was the want of a sufficient quantity of good lymph; and this was owing to the general unwillingness shown by all the most learned, intelligent, and informed, as well as the most ignorant and illiterate, to allow lymph to

be taken from their successfully vaccinated children, not caring to know that at that rate vaccination would have to cease altogether. This antipathy to allow lymph to be taken was in some cases so very powerful as to make some persons forego the benefits of vaccination and keep their children unprotected, rather than get them vaccinated and be then required to give lymph from them. In animal vaccination we have now provided to us the means of producing a supply of lymph, the purest and most effective, to an unlimited extent. Each successfully inoculated heifer can give us lymph enough to vaccinate a hundred persons. Many have seen this, and have seen also that, having thus an independent supply of lymph, children with lymph are not molested, and, thus re-assured, have not hesitated to bring their children to the stations to be vaccinated. This in itself is not a trifling advantage. It will smooth the way considerably for the quiet carrying out of the proposed Vaccination Act. Backed by an Act, animal vaccination cannot fail to put an end to epidemics of small-pox in Bombay.

Conduct of Vaccinators.

5. The subordinates have given me every satisfaction, and their conduct and assistance in connection with animal vaccination is deserving of praise.

Never saw Syphilis communicated by Vaccination.

6. So far as my observation and experience go—and they are both extensive, extending over a period of some twenty years—I have never seen syphilis communicated by vaccination.

VACCINATION UNDER CIVIL SURGEONS AND OTHERS.

POONA.

One Government Vaccinator under the Civil Surgeon, Surgeon Major LORD, M.D. Population (portion of Poona) 30,000. Total cost Rs. 192. Average cost of each vaccination, 1 anna and 11 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868.....	1,641	.....	.....	1,387	.....
1869-70	1,565	.....	76	1,323	85·0

Report.—Vaccination is performed at the Sassoon Hospital, and under the Civil Surgeon of Poona by Assistant Vaccinator Bapoo Narayen (General No. 44). The extent of his charge and estimated population (30,000) were described in last annual report. His salary has been fixed at Rs. 16 a month, or Rs. 192 a year, which is the total cost of the vaccinations performed; there being as yet no Peon allowed, and lancets and paper, &c. are supplied from those drawn for the Sassoon Hospital expenditure. The Vaccinator is paid entirely by Government. The Municipality keep up Vaccinators of their own, who are not now under the superintendence of the Civil Surgeon. The average cost of total vaccinated by the Assistant Vaccinator in the last year was rather less than annas 2 for each operation, and annas 2 and pies 4 for every successful case. The increased or revised scale of pay now allowed to the Vaccinator, and a decrease in the number of vaccinations, are the reasons why the average cost is slightly higher than in former years.

Remarks.—1st. There has been a slight decrease in the number vaccinated compared with the preceding year. The proportion of successful cases is about the same. 2nd. There has been no variation deserving of special remark in the general progress of vaccination. 3rd. The lymph has been good and abundant, and supplies of it have been at all times forwarded to Medical Officers requesting it. 4th. The Vaccinator has been regular and attentive in the performance of his duties. 5th. He requires the assistance of a Peon, which is given in all other Civil Hospitals to which Vaccinators are attached. In Mr. Peile's revision three Peons are specified for Hospitals that have Vaccinators. There are but two now allowed on the establishment of the

Sassoon Hospital. 6th. Small-pox existed in Poona and its vicinity from January till May last year. Judging from our Hospital returns, it was most prevalent in January and March, and declined after the latter month. There has been none this year. The want of a separate ward or an Hospital for small-pox and other inflectious diseases is very much felt at Poona. This was noticed in the last yearly report; but, so far as I am aware, no effective steps have been taken to supply the want either in the Cantonment or for the Station generally.

SHOLAPOOR.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon G. Y. HUNTER.

Population 60,000. Total cost Rs. 240. Average cost of each vaccination, 4 annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868.....	671	.....	.....	585	.....
1869-70	949	278	.....	802	89·6

The total number of cases vaccinated during the year by the Government Vaccinator in the town and out-parts of Sholapoor, as shown in the above table, exhibits an increase of 278 as compared with the preceding year. During the period under review, there have been two Vaccinators at work in the town of Sholapoor, and their joint labours raise the total of vaccination to 1,599. The second Vaccinator is employed by the Municipality, and furnishes his report thereto. The vaccination is practised continually in the city, and once a week the children are brought to the Civil Hospital by the Government Vaccinator for my inspection. In nearly all the cases which came under my observation, the vesicles were well formed and the lymph of good quality. The vesicles, though normal in character, were somewhat smaller during the rains than in the other seasons. The Vaccinator seems willing, diligent, and well behaved, but often complains of the difficulties he has to contend with from the opposition of the inhabitants, who do not seem yet to fully appreciate the blessings of this almost certain preventive against small-pox; were it otherwise, the number of operations upon children under one year would be many more than at present among a population of 60,000. The Lingayet portion of the community are still very averse to vaccination, particularly the Bunyas and weavers. I am happy to be able to state, however, that no epidemic occurred during the last year.

SHOLAPOOR CHARITABLE DISPENSARY.

Operations performed by Nursoo Goorapah, Third Class Hospital Assistant, in Medical charge of Dispensary and the Native Medical Pupils.

Population 60,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868.....	78	.....	.....	68	.....
1869-70	201	23	.....	164	86·3

Vaccination was performed every week on Wednesdays at 10 A.M. by me or the Native Medical pupils attached to this Dispensary in addition to our other duties. The increase in the number of operations this year is owing chiefly to the services of a Peon having been placed at the disposal of the Dispensary in the month of May 1869. The operations were not all done at the Dispensary. The Peon with one of my Native Medical pupils was occasionally sent out to vaccinate. The result was then inspected by me at the Dispensary. Vaccination seems to have made pretty good progress during the year under report. The people, especially the Lingayets, who form at least one-third of the population of this town, though still reluctant to subject their children to the operation, are coming out slowly, and becoming sensible of the advantages of vaccination. The deformities produced by small-pox, which the people still think is the work of a goddess, have convinced many people of the necessity of vaccination. Although much is done, still much remains to be done.

2. The lymph in use throughout the year was to all appearance very good. The resulting vesicles were normal in size and appearance.

3. Measles prevailed in the hot season in the town, but to what extent I have not been able to ascertain.

4. The present Municipal Vaccinator, Pundhernath Dyanashwer, who now and then brings the children operated upon by him for my inspection, seems to be a diligent and hard-working man. He has, in addition to the duties in the town, to go to several small villages within three miles distance of this town.

5. As vaccination was performed by the establishment attached to this Dispensary, the cost, &c. of vaccination itself cannot be properly ascertained.

DHOOLIA.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon G. BAINBRIDGE.

Population 13,277. Total cost Rs. 193. Average cost of each vaccinatino, 3 annas and 1 pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	878	.....	.....	710	87·9
1869-70	996	118	.....	895	89·8

Considering that the population of this place is but slowly, if at all, increasing, I think these figures indicate a very satisfactory progress, which may be attributed to the constantly increasing value set upon vaccination by the inhabitants. Vaccination has been performed twice every week, and the supply of lymph has been uninterrupted and of good quality. Much less difficulty than heretofore has been experienced in procuring subjects for vaccination since the appointment of Hospital Peons, one of whom has always been available to assist the Vaccinator. The Patel of the village was somewhat irregular during the early part of the year in attending to render aid to the Vaccinator; but latterly he has given proper assistance, after having been frequently reminded of his duty. Many people are still averse to bring their children for inspection of the results of the operation. All those, however, who live in the town are examined without fail, and only a few escape who go away from the place before the period of maturation of the vesicles is completed. Many of the uninspected cases go to make up the list of doubtful vaccinations, but most of them would certainly have been found successful if present for examination. There are still some of the well-to-do classes of Hindoos who persist in trying every possible prevarication and excuse with a view to evade the operation, though they seldom absolutely refuse to submit their children to it.

The conduct of the Vaccinator during the past year has been satisfactory.

The Municipal Commissioners of the town have, in accordance with the desire and suggestion of Government, sanctioned a charge of Rs. 15 per mensem for the pay of a Municipal Vaccinator. This expenditure has been estimated for in the Municipal Budget Estimate for the year 1870-71, and may therefore be commenced from the 1st April 1870, when the Government will be relieved of the charge for vaccination at this station. Since the month of November 1869, the Assistant Vaccinator has been in charge of the Charitable Dispensary lately opened, and has, at the same time, been performing his substantive duties. His pay has been saved during this period.

Small-pox was prevalent in the town during the months of April and May; fourteen cases came under my observation, and I believe that this number embraces almost all which occurred. Most of these cases were treated at the Civil Hospital either as in- or out-patients. Two of them—infants—died from bronchitis and sloughing of the cornea.

NASSICK.

One Government Vaccinator (from 1st April to 1st November) under Honorary Assistant Surgeon B. BURN.

Population 22,878. Total cost, Rs. 163. Average cost of each vaccination, 5 annas and 6 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868.....	1,013	.....	.....	956	.....
1869-70	476	.....	537	424	89·1

Remarks.—The return of vaccination for the past year embraces a period from the 1st April to the 18th November only, when the Government Vaccinator was transferred to the Municipality, and the Vaccinator previously entertained by that body was discharged, leaving a single Vaccinator, paid by the Municipality, for the town of Nassick. The number vaccinated during this period by the Government Vaccinator was 476. The percentage of successful cases is 89·1. This rather low percentage of successful cases is owing chiefly to the children of travellers having been vaccinated and having left the station before the result could be known, and the cases marked doubtful. This occurred more frequently during the past than the preceding year. The lymph throughout the year was good, and the vesicles characteristic. The conduct of the Vaccinator was good, and gave entire satisfaction. He appears to be an intelligent man, experienced, and very attentive in the performance of his duties. The arrangement just completed for the performance of vaccination in Nassick, viz., the employment of one Vaccinator on a slight increase of salary by the Municipality, is deemed sufficient, and there does not appear to be any other alteration required at present. Nassick has been entirely free from small-pox during the past year. Ballajee Bappoojee is the Vaccinator; at first in the Government Service, now employed by the Municipality. The population amongst whom the vaccinations were performed amounts to 22,878, and the cost of each vaccination by the Government Vaccinator amounted to a fraction under 5 annas and

6 pies, not including the cost of lancets, which were supplied from the Hospital stores as required. The number vaccinated by the Municipal Vaccinator during the year was 509, at a cost of 7 annas and 1 pie each nearly, not including the value of lancets and stationery, which were supplied by the Superintendent of Vaccination, and the price is not known. Government paid a Vaccinator at Rs. 10, and subsequently at Rs. 13 per mensem to the 18th November, and a Peon at Rs. 7 per mensem to the 22nd December, with Rs. 4-15-0 for stationery, amounting to Rs. 163-0-7. The Municipality paid a Vaccinator at Rs. 12, and subsequently at Rs. 15 per mensem, with a Peon at Rs. 6 per mensem, during the year, amounting to Rs. 225.

KULLADGHEE.

One Municipal Vaccinator under the Civil Surgeon, Assistant Surgeon J. SIMPSON, M.B.

Population 14,384. Total cost Rs. 122. Average cost of each vaccination, 3 annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868.....	628	.....	.....	628	100·0
1869-70	651	23	.....	651	100·0

During the year 1869-70, 651 persons have been vaccinated by the Municipal Vaccinator, Duttatree Narayen, in a population of 14,384, at Kulladghee and surrounding villages, at a total cost of Rs. 122, including pay of Vaccinator and contingencies, at the average cost of about 3 annas for each vaccination, this sum being paid by the Municipality of Kulladghee. There is a small increase this year as compared with last year. The Vaccinator informs me that the people are now more willing to have their children protected, as they see the benefit of it. The state of lymph has been good: it is kept up by vaccinating from arm to arm.

The conduct of the Vaccinator was good.

There has been no small-pox in the town of Kulladghee; but the Vaccinator tells me he has seen a few cases in some of the villages he has visited.

I think a small supply of empty tubes might be issued to the Vaccinator here to enable him to supply any of the neighbouring Vaccinators with fresh lymph if required, as it would be kept in a better state in them than on plates.

BAGULKOTE.

Operations performed by Amroota Tattia (General No. 460), Third Class Hospital Assistant, in Medical charge of Dispensary.

Population 12,247. No Cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868	113	.....	.....	102	.....
1869-70	229	116	.....	216	94·2

The vaccine operations in the Dispensary were performed by me amongst a population of 12,247.

As the operations were performed by me, with the assistance of the Dispensary Peon and a Police Sepoy, who attends on certain fixed days appointed for this purpose, and as the lancets, papers, &c. that were used belong to the Dispensary, no separate charges could be named for vaccination.

2. It must also be observed that even these charges are supplied by the Municipality. The average cost could not also be computed for the above reason.

3. Comparing the work for the seven months of 1868-69 with that of last year, there may appear a decrease in the average of about 36 children, and the only cause of the decrease appears to be, that the Municipality have appointed a separate Vaccinator from the month of January 1869. That individual goes over the town as well as the surrounding villages to carry on his operations; so the people prefer getting their children vaccinated at home, instead of taking the trouble of attending the Dispensary.

4. The number of children vaccinated by the Municipal Vaccinator during the last twelve months amounts to 375, and this sum being added to the number of those vaccinated in the Dispensary makes a total of 604, which shows that the general progress is extremely satisfactory.

5. I am very glad to state that the state of the lymph throughout the year was excellent.

6. There were no cases of small-pox in this town; but I hear that the disease was prevalent in the neighbouring talookas, especially in Moodebehal and Hoongoond, during the four months of the hot season.

DHURRUMGAUM.

Operations performed by Mr. Apothecary W. WAITE, Khandeish Bheel Corps.

Population ..... No Cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	108	.....	.....	92	85·4
1869-70.....	167	59	.....	165	98·8

Vaccination was without much difficulty carried on throughout the year, and with, I am happy to say, far greater success than during the preceding year. 167 children, of ages varying from four months to three years, were vaccinated. Of these, 162 were of the Bheel corps, and 5 of followers. 165 cases proved successful, and only 2 unsuccessful; these latter being again vaccinated until the operation proved successful. The number of unsuccessful cases to successful, as shown, is very small compared with previous years, being only 1·2 per cent. The unsuccessful cases, it was noticed, occurred in children above one year of age rubbing and scratching their arms and breaking the vesicles before they arrived at maturity. On one occasion only during the year (in the month of November) was I necessitated to apply to the Native Vaccinator at Nusseerabad for a supply of lymph, and which he very readily supplied me with (sent on glasses). The lymph appeared very good and healthy, and vaccination was recommenced at the beginning of December. During eleven months of the year, from April to October and December 1869, and from January to March 1870, a fresh supply of lymph was continually kept up, and vaccination was propagated from one child to another, which accounts for the very small number of failures. In one instance only, as above remarked, did the supply of lymph in the Hospital run short. Vaccination is still practised once a week amongst the children of the corps and followers, the operation being at all times carefully performed by myself.

2. It is most pleasing to have to note again during another year the entire absence of small-pox amongst the children of the corps, and that only a few mild cases appeared in the town of Dhurrumgaum.

No fatal cases were reported as having occurred.

KARWAR.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon S. B. HALIDAY *(Acting)*.

Population 9,975. Total cost, Rs. 154. Average cost of each vaccination, 3 annas and 4 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase,	Decrease.		
1868	362	.....	.....	306	.....
1869-71	733	371	.....	601	86·0

The total number vaccinated during the year 1869-70 is 733, being 371 more than in the previous year. Of this total number, 100 only were under one year of age, and 633 over that age. The small number under one year is accounted for by the very great prejudice the natives have against vaccinating a child under one year of age; after that age they readily submit, but do not seem anxious, to have the operation performed, except when small-pox prevails, and then they become anxious to have it done.

Station Vaccinator Simon Gonsalves (General No. 329) is paid entirely by Government, and I allow one of the Hospital Peons to assist him.

The increase I consider fair and satisfactory, and shows that the natives are getting more faith in the operation. The lymph has been good and in sufficient quantity during the year.

The conduct of the Vaccinator has been satisfactory. I cannot suggest any improvement over the present system.

Small-pox is rare here; 9 persons were attacked lately, and of this number 2 died and 7 recovered. The two fatal cases were not vaccinated; 2 also of the cases which recovered were not vaccinated, and those suffered more severely than the vaccinated. The disease then disappeared, and no measures were necessary to arrest it.

SATTARA.

One Government Vaccinator under the Civil Surgeon, Surgeon H. V. CARTER, M.D.

Population 22,949. Total cost, Rs. 305. Average cost of each vaccination, 2 annas and 4 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868	3,177	.....	.....	2,825	.....
1869-70.....	2,038	.....	1,139	1,831	98·2

The above table shows a diminution in the number of vaccinations at this station, as compared with the previous year, but not with other former years. The cause of decrease may be referred to the great prevalence of cholera in 1869: for experience has shown that this fell disease has a paralyzing and distracting effect upon the people, highly unfavourable to the progress of vaccination; families are both unwilling to move, and are strongly disinclined to vaccination, during the prevalence of this epidemic. Such considerations, I am assured, amply account for the falling off in the number above shown; and I believe there is generally no opposition offered to Vaccinator's work, but, on the contrary, a satisfactory appreciation of its benefits. It should be added that small-pox widely prevailed during the early part of the year under report, and had not the dread occasioned by cholera co-existed, it is probable that no decrease would have occurred, as vaccination was proceeding steadily in April (in which month no fewer than 837 children were vaccinated); but afterwards the monthly number diminished two-thirds, and then suddenly fell to 97 in June.

2. The lymph employed here continues to be good and efficient; in the month of September, as it appeared to give less satisfactory results than usual, a fresh supply was obtained in tubes from the Circle Superintendent, but it did not take well, and with the subsidence of the rainy season the original lymph much improved. Perhaps this fact may serve to show the unabated efficiency of Jennerian vaccine, which the advocates of animal vaccine (so called) are disposed to doubt. The percentage of success, 89·8, is slightly over that in 1868, which stood at 88·9.

3. The Vaccinator has continued to conduct his work so well, that any addition to his pay, by way of batta, for district work, would be merited; and it does not seem clear why he should not have the benefit of rank by service as well as Hospital Assistants and District Vaccinators.

4. Referring to the subject named in paragraph 2 of Circular No. 4442, dated 9th December 1869, by the Inspector General, Medical Department, and subsequent

instructions, (*a*) and (*b*) are shown in the attached return. Total cost as last year, Rs. 305 per annum paid by Government only; finally (*d*) the average cost of each vaccination amounted to annas two and pies four, being an increase on that of the previous year, owing to the smaller number actually vaccinated.

BELGAUM.

One Government Vaccinator under the Civil Surgeon, Surgeon Major G. G. MAITLAND, F.R.C.S.

Population 35,973. Total cost, Rs. 156. Average cost of each vaccination, 3 annas and 11 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868.....	578	.....	.....	566	.....
1869-70	627	51	.....	611	97·4

Vaccination has been carried on by the Station Vaccinator uninterruptedly throughout the year.

The number vaccinated is in advance of that of the previous year by 51, and it is hoped that now the Vaccinator has a Peon permanently attached to him, he will be able to show a greater increase of numbers vaccinated than in former years.

In addition to the number above shown, the Vaccinator was engaged in carrying on operations in the Cantonment Bazaar and Ordnance Lascars' Lines. In the former 95 children were vaccinated, and in the Lines 21; total 121. Of these all were reported successful.

The vaccine lymph has been uniformly good, and the percentage of successful vaccinations is 97·4. The success, however, I ascribe, in great measure, to the practice here adopted, of carrying on arm-to-arm vaccination, and not trusting to the dry vaccine virus, which in certain seasons, and however carefully preserved, very often fails in its results.

The Vaccinator is an old and experienced operator, and I have every reason to be satisfied with the work performed, and to the trustworthiness of his returns. Small-pox in a modified form was somewhat prevalent in the town, Cantonment Bazaar, and Lascars' Lines during the month of April 1869. Of the 23 cases reported within the Military limits, 15 were adults and 8 were children. All the persons attacked had been previously vaccinated, and all made a favourable recovery. Of the few cases among the Ordnance lascars that came under my own observation, the disease appeared in a very mild form, and speedily recovered.

DHARWAR.

One Government Vaccinator under the Civil Surgeon, Surgeon M. M. MACKENZIE.

Population 30,000. Total cost, Rs. 120. Average cost of each vaccination, 2 annas and 3 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868.....	661	.....	.....	536	.....
1869-70	835	174	.....	718	85·9

The accompanying vaccination return for the past official year shows an increase of 174 over that of the preceding year, there having been 835 operated upon as compared to 661 in 1868; of these 835, 718 were successful, giving a percentage of 86, as compared to 81·1 of the preceding year. The greatest number of monthly vaccinations occurred respectively in May, March, February, January, December, November, and June.

Sex and Age.—Under this head 430 males and 405 females: 226 were under 1 year and 569 above that period.

Caste.—Hindoos, 550, form the greater majority, followed by Mussulmans 268, 15 Christians, and 2 Parsees.

Cost.—The total cost of vaccination was Rs. 120, giving thus annas 2 and pies 3 to each vaccination, or 7 pies less than that of 1868. These expenses are paid by Government, as also a yearly supply of two lancets, and Maratha, Canarese, and English forms.

The percentage of vaccination to population stood at 2·7, a slight increase over that of the preceding year. I have every reason to be perfectly satisfied with the assistance given by the Civil Authorities.

The supply and quality of lymph has always been fully kept up; at various times supplies have been called for and given to Kolapoor State, Superintendent of Vaccination Southern Circle, and Regimental Hospital at Dharwar.

Small-pox in the Dharwar districts.

According to the monthly report forwarded by the Collector's Department, I am glad to be able to state that there has been a great falling off in the number of small-pox cases in the Dharwar Collectorate. While the year 1868-69 gave a total of 1,467, that for 1869-70 gave only 614, or a reduction of 853 cases: the monthly report for March has, however, not yet been received. The greater number of small-pox cases occurred in the months of April, May, June, and July, giving respectively

162, 112, 97, and 68; there has been a steady decrease towards the latter months of the year, November and December presenting only 16.

The late Vaccinator, Shewana, had for a long time been consumptive, and, although a good, conscientious man, was unable latterly to overtake his work. He died in December 1868, and was succeeded by the present Vaccinator, Appana bin Teepuna, a good, steady, and zealous youth, who, I am glad to report, has been increasing the numbers and success of vaccination cases.

TANNA.

One Municipal Vaccinator under the Civil Surgeon, Assistant Surgeon W. C. KIERNANDER *(Acting)*.

Population, 10,581. Total cost, Rs. 246. Average cost of each vaccination, 10 annas and 9 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease		
1868.....	232	.....	.....	191	82·3
1869-70	324	92	.....	300	92·5

Vaccination was carried on throughout the year in the town of Tanna, with the above, I think, very satisfactory results. They include 49 cases that were vaccinated in the neighbouring villages, as will be seen from the following return for the year.

The Vaccinator's name is Pandoo Ram Sawunth. He is paid by the Municipality, and his salary has been increased from Rs. 11 to Rs. 20 a month; he has also been allowed, he tells me, to spend Rs. 6 and annas 5 in presents to the children, and their mothers who allow lymph to be taken. The total cost, therefore, to the Municipality has been Rs. 246 (no Peon is paid by the Municipality). Each vaccination cost 10 annas and 9 pies. I have not seen a single case of small-pox during the year I have been here, nor has any case been reported to me. The lymph was good, and I found no difficulty in keeping up a regular supply. The Vaccinator behaved well during the year, and is a willing and hard-working man. I have found no difficulty in inducing people, who have at first refused, to allow their children to be vaccinated, by quietly pointing out its benefits, and the dangers likely to accrue to the whole family and neighbourhood if such a pestilence as small-pox once breaks out amongst them. I have seen every case operated on by the Vaccinator in the town, and have vaccinated a few myself, and have no doubt that the confidence engendered in the parents of those already vaccinated will give us a large increase of numbers in 1870-71.

RUTNAGHERRY.

One Government Vaccinator under the Civil Surgeon, Surgeon C. JOYNT, M.D.

Population, 20,789. Total cost, Rs. 229. Average cost of each successful vaccination, 3 annas and 1 pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868.....	1,342	.....	.....	1,080	.....
1869-70	1,188	.....	154	847	72·2

There is a decrease in the number vaccinated as compared with the year 1868, and the percentage of success is considerably less also. This was owing to the variable quality of the lymph used till January, in which month it was so bad that eighty-two operations (all that were performed) failed. A new supply of good lymph was obtained from the Circle Superintendent in February, and the operations have been fairly successful since. The progress of vaccination in Rutnagherry is slow, and the reluctance of some of the people to its extension considerable; and this reluctance is to some extent attributable to the unsuccessful result of the operations, people naturally disliking the trouble of having their children operated on when the operation proves of no use. The lymph was variable during the earlier months of the year, becoming worse towards the end of 1869, and very bad in January, when every operation failed; it was good in February and March. The conduct of the Vaccinator has greatly improved in the last three months. Any improvement that may be deemed practicable will be adopted, and the Writer is attentive to the matter. Small-pox has been prevalent in the neighbourhood during the greater part of the year, and has had the effect of causing a greater demand for vaccination than previously obtained.

VINGORLA.

Operations performed by the Medical Pupils under Mr. Apothecary MUNDAY'S supervision.

Population, 10,000. No Cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868.....	382	.....	.....	358	.....
1869-70	296	.....	86	275	95·8

Vaccination has been performed by the Native Medical pupils attached to the Civil Hospital, and under the supervision of the Apothecary in Medical charge of the Station of Vingorla.

2. A decrease of eighty-six in the total number vaccinated, as compared with the previous year, is owing to the vaccination being stopped in July, in consequence of Cholera being amongst the inhabitants, and those children that had been vaccinated in the end of June having left the place, fearing the Cholera that was in the vicinity of their houses. Lymph was obtained from Sawunt Warree early in August, which proved good, and vaccination has been kept up since with considerable difficulty, the inhabitants not caring about it. Notwithstanding the Chief Constable giving all the assistance in his power, and the operations performed at the dwellings of the people, it is with difficulty that sufficient numbers can be procured: the parents hide the children when they see any one approaching for the purpose of vaccinating. There being no Native Vaccinator's Peon here to procure children, a considerable amount of trouble is experienced.

3. Progress does not appear to have been made during the year.

4. The lymph has been good throughout; in many cases the vesicles have been found broken by the parents, to prevent its being taken to vaccinate others.

5. Improvements might be made, and the numbers increased, if a Native Vaccinator or Peon resided here for the purpose of collecting children.

6. No cases of small-pox occurred during the year.

DAPOOLEE.

Operations performed by Honorary Assistant Surgeon A. Pollard, in charge Civil Hospital.

Population, 6,000. No Cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	252	.....	.....	228	90·5
1869	348	96	.....	288	82·8

During the year 1869-70 there were 348 children vaccinated, varying in age from three months to ten years. Compared with the preceding year this shows an increase of 96, and if compared with the year 1867 an increase of 225 vaccinations; thus showing that the prejudice entertained by the population against this operation being performed

on their children is rapidly giving away before the known benefits derived : in fact, the people now seem to look upon it in its proper light, and believe it to be a preventive of small-pox, or, if the disease should be contracted after vaccination, they believe that it will appear in a very modified form. Of the children operated on, 202 were males and 140 females,—1 Christian, 319 Hindoos, and 28 Mussulman ; 72 were under 1 year and 276 above that age ; 288 were successful, 18 unsuccessful, and 42 doubtful. The lymph was generally good, but it appeared after the lapse of time to deteriorate. When such was the case a fresh supply was applied for. The unsuccessful and doubtful cases cannot be attributed to bad lymph, as other children vaccinated from the same virus produced genuine and excellent vesicles. On the whole, I consider that vaccination has been very successful. Vaccination has been carried on almost all the year, with the exception of short intervals in the months of June and July, and again in August and September. In the latter part of December a few cases of small-pox occurred in the camp at Dapoolee, about eight altogether. Upon inquiry, I found that, with the exception of two very young children attacked, all had been vaccinated : they were all of a modified character, and no death occurred. The disease has raged a good deal the last three months in the Dapoolee District, particularly at Bankote and Muddunghur, which are situated to the north-east and about 20 or 25 miles from Dapoolee. Some deaths have taken place, but, I believe, it has now almost ceased. The native District Vaccinator has been employed there since its first outbreak.

ALIBAUGH.

Operations performed by Sub-Assistant Surgeon PEREIRA, in charge Dispensary. Population, 4,704. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868.....	335	.....	.....	263	90·0
1869-70	161	.....	174	136	84·4

The above number of children were vaccinated by me either at the Hospital, in the town, or the neighbouring villages. The services of a Peon were allowed me by the Civil Authority when necessary. The number of vaccinations performed this year is less than the preceding year, as vaccination had suffered a temporary cessation during the last monsoon, on account of the prevalence of cholera in the town and its vicinity. The parents could not be persuaded to bring their children for vaccination under such circumstances. The advantages resulting from the practice of vaccination is tolerably well understood and appreciated by the people, except the Kolee section.

The quality of the lymph made use of during the year was good. The vesicles were of normal size and appearance, and passed regularly through their various phases. The want of lymph sometimes felt, owing to parents objecting to its being taken from the vesicles, but it was soon supplied by the Superintendent of the Circle. Small-pox prevailed to a certain extent in the town, especially among the Kolees, or fishermen, who entertain strong prejudices against the practice of vaccination, and never allow their children to be vaccinated.

SURAT.

One Government Vaccinator under the Civil Surgeon, Surgeon H. J. GANE, *(Acting)*.

Population, 90,000. Total cost, Rs. 264. Average cost of each vaccination, 2 annas and 6 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868.....	2,840	.....	.....	2,390	.....
1869-70	1,680	.....	1,160	1,523	96·7

The population of Surat is estimated at 90,000. During the past official year one thousand six hundred and eighty children have been vaccinated by the Native Vaccinator (under my supervision), being a decrease of one thousand one hundred and sixty compared with the previous year. The decrease is to be attributed to the circumstance that small-pox did not prevail during the year: consequently the natives were not so ready to bring their children for vaccination.

Results.—One thousand five hundred and twenty-three cases were successful, fifty-two were unsuccessful, and one hundred and five were unknown.

The percentage of successful cases, not excluding doubtful cases, being 93·7.

Sexes.—Eight hundred and sixty-one were males, and eight hundred and nineteen were females.

Castes.—Nineteen were Christians, one thousand three hundred and seventy-six were Hindoos, one hundred and sixty-four were Mussulmans, forty-five were Parsees, and seventy-six were other castes.

Ages.—Nine hundred and fifty-nine were under one year, and seven hundred and twenty-one were above one year.

Lymph.—A good supply has been kept up, and the vesicles have been large and well-defined.

Cost of Vaccination.—The Vaccinator's pay for the year, according to the new scale, was Rs. 155-8-0, and that of the Peon Rs. 96-0-0, lancets Rs. 12, and paper annas 12; total Rs. 264-4-0. The average cost of each vaccination appears to be annas two and pies six, being an increase of annas one and pies six and a-half compared with the previous year, which is accounted for by the increase of pay to the Vaccinator and Peon, also for the lancets and paper (which two last items were not included in the previous year.

Character of the Vaccinator.—The Vaccinator has been most attentive to his duties, and has given every satisfaction.

BROACH.

One Government Vaccinator under the Civil Surgeon, Surgeon J. GLEN.

Population, 30,000. Total cost, Rs. 249. Average cost of each successful vaccination, 3 annas and 6 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Sucessfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	1,266	.....	.....	1,018	80·4
1869-70	1,131	.....	135	1,071	94·6

There has been a decrease in the number of children vaccinated of 135 as compared with the preceding year. This decrease would appear to be attributable to fewer individuals frequenting Broach during the cotton cleaning season than used to, many people from the districts having then been employed at the native churkas, which now have almost disappeared. The people, therefore, who used to find occupation in this manner, find it gone. They, therefore, have turned themselves to agriculture and other employments in the native villages. Their children, on this account, who used to be vaccinated by the Town Vaccinator, will now become subject to the vaccine operations by the individuals appointed for that purpose in the different districts. There appears to be no suggestion to offer at the present time with regard to the speedier progress of vaccination. The present operator carries out his duties actively and zealously, and there is nothing in his conduct to call for remark. No small-pox epidemic has visited Broach or the districts during the past official year, and the lymph has been at all times good.

KAIRA.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon H. Cook, M.D.

Population, 12,539. Total cost, Rs. 242. Average cost of each vaccination, 4 annas and 1 pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	796	.....	.....	638	80·1
1869-70.....	951	155	.....	725	76·2

The total number of cases of vaccination performed by the Station Vaccinator in the town of Kaira and its neighbourhood has been 951. This, compared with the number of cases in the preceding year, shows an increase of 155—showing greater diligence on the part of the Vaccinator, and the absence of some disturbing causes which were present during the preceding year, and partly also to there being a Peon engaged especially for the work during the greater portion of the year. Of the total number, 829 operations were performed on children under one year; the remainder, 122, were performed on children and others over one year—several of the latter being prisoners, whose vaccination was deemed advisable on admission to Jail.

With regard to *sex*, 584 were males, 267 females; *caste*, 847 were Hindoos, 53 Mussulmans, 2 Christians, 49 other castes. As to the *results*, it will be observed that a comparative large number, 226, are set down as doubtful or unsuccessful. With regard to the former, it is to be observed that many children were vaccinated in Kaira who were brought by their parents or other relatives from villages at a distance, and the result of the operation on these could not be ascertained; while in others belonging to the town or neighbourhood, the vesicles were so much injured by scratching, &c., that a proper opinion could not be formed of their efficacy. The greater number of the absolutely unsuccessful cases were among the prisoners,—few, if any, of whom were successfully vaccinated, they either having been vaccinated previously, or, more probably, having had a slight attack of small-pox, which left slight or no traces on them.

The work of the Vaccinator is confined to the town of Kaira and the neighbouring villages, in which he is obliged to go occasionally, so as to be able to keep up his supply of lymph, as at times subjects for the operation are not to be obtained in the town itself. As before mentioned, he vaccinates, when he has an opportunity, children who are brought into the town by their parents from distant villages when they come here on business. The population of the town itself is, according to the latest information, as follows: males 4,342, females 4,760, children 3,437; total 12,539.

The quality of the lymph and vesicles has, on the whole, been good, though fresh supplies of lymph have had to be obtained three or four times in the course of the year, owing to the deterioration of the vesicles.

When this was observed good lymph was at once obtained from the district Vaccinator, and the work carried on without delay. At present a fresh supply is required, and has been applied for.

The conduct of the Vaccinator has been good on the whole, though I have had to find fault with him for want of care in the selection of vesicles with which to carry on his vaccinations, also for vaccinating at a later hour of the day than was advisable, and, consequently, working under unfavourable conditions. The children vaccinated are inspected every month, and the character of lymph thereby ascertained. The inhabitants seem to fully understand the value of the operation, and, as a rule, do not object to have the operation performed. At the same time, it must be stated that they do not evince any anxiety about the matter: they must be sought out; and when the children are vaccinated, their parents do not trouble themselves much about ensuring the successful result of the operations, by preserving the vesicles from injury.

There has been no epidemic of small-pox in the town, nor have I seen any cases among patients brought for treatment at the Civil Hospital, though a few cases do occur. So far as I am aware, inoculation is not practised. The operations were performed by Assistant Vaccinator Ramchunder Barsay (General No. 209).

The total cost of vaccinations for 1869-70, all of which is borne by Government, was Rs. 242-8-0, and the average cost of each vaccination was 4 annas and 1 pie. The average cost of each vaccination for the year 1868 was a little over 2 annas and 7 pies; the increased cost for 1869-70 is principally due to the increased rate of pay to the Vaccinator and the pay of a Peon entertained for this work since February. The present system of vaccination seems to work well; and unless vaccination is made compulsory, I see no other means of making it more general but time; and consequent increased intelligence and knowledge of the benefits of the operation among the people.

AHMEDABAD.

Two Municipal Vaccinators under the Civil Surgeon, Surgeon Major D. Wyllie, M.D.

Population 150,000. Total cost, Rs. 464. Average cost of each vaccination, 1 anna and 1 pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868	4,604	.....	.....	4,489	.....
1869-70.....	4,047	.....	557	3,881	96·8

The total number vaccinated was 4,047, which, compared with the work of the previous year as above exhibited, shows a decrease of 557 operations. The unusual prevalence of measles, more or less present throughout the entire year, is assigned as the chief cause of decrease. But, apart from this, other influences must have been operating to account for the large falling off in vaccinations since 1866; and this, I think, is due to the fact that, as a municipal institution, the establishment has not the same status in popular estimation that it had when it was directly employed by Government. The repeated complaints of late years, that parents, on one pretence or other, conceal or withdraw their children after vaccination, so as to prevent their employment in propagating the prophylactic,—the excuse commonly put up resting on an assumption that removal of lymph from a ripe vesicle vitiates the protective efficacy of the operation,—is a matter that Municipal Peons are almost powerless to deal with, and hence much time is vexatiously wasted in daily search for children to vaccinate from. Moreover, it would appear that the utility of the establishment is affected by the position the Municipality may chance to occupy in public favour; and in this view, the Vaccinators have, no doubt, been working at some disadvantage of late. It is thus, I believe, that vaccination has retrogaded since 1866, when the operations amounted to 5,505.

Of the number for the year, 2,018 were males and 2,029 females. Hitherto, males have ever predominated; and although, latterly, in lessening ratio, it is still a notable fact to find that the corelative proportion of females is now almost fairly represented. As to age there were 2,795 operations under one 1 year and 1,252 above. These figures relatively are in close correspondence with previous experience. In respect of results, the ratio of successful cases was 96·8 per cent. of the whole, the unsuccessful and doubtful aggregating 126, while 40 shown as unknown were altogether lost sight of.

The lymph employed was that introduced from England in 1863. It is reported to have continued good throughout the year, and the vesicles that have come under my inspection since resuming charge have been distinctive, although somewhat small. In several instances, however, the cicatrices have appeared less typical than could be desired, and I therefore think it advisable that fresh lymph should be tried.

Both Assistant Vaccinators are steady, experienced men, earnest in their efforts to extend vaccination. They have been favourably reported on throughout. One (Shaik Hoosain) performed 2,046 operations; the other (Mahasook Wiswonath) 2,001; the number of unsuccessful and doubtful cases amounting in the instance of the former to 90, and as respects the latter to 76. The total outlay was borne by the Municipality. Inclusive of lancets and stationery it reached Rs. 464. The average cost of each operation was thus 1 anna and 1 pie. The amount of population can only be guessed at. By the imperfect census of 1854 it was returned at 100,000. It is now roughly estimated at about 150,000. As to the practicability of improvement, there can be no doubt that the substitution of Police Peons for those of the Municipality would materially conduce to promote the extension of vaccination. The mere

semblance of authority, without any of its exercise, would do much to overcome the vexatious obstructions that prejudice and ignorance put up as respects children already vaccinated, while the presence of such Peons would be an assurance to the people of Government being still directly interested in the success of the work, and thus confer a prestige on the labours of the establishment, which, as servants of the Municipality, it would be vain under existing circumstances to look for.

Small-pox was more or less present in the city from January to June, and gave some little stimulus to the efforts of the Vaccinators, although less pronounced than in former years. The deaths from this disease for the period, as registered by the Municipality, were 117. Every case was taken to lessen the spread of the epidemic; and while the occasion was used to press vaccination on the people, the houses wherein affected persons had been were subjected to lime-washing, and buildings outside the city were set apart as a separate Hospital for the reception of cases.

An incident occurred that may be recounted in illustration of the difficulty of obtaining lymph from children. One of the Peons had obtained the consent of the mother of a vaccinated infant to permit the Vaccinator to take lymph from its arm, and while this was being done the Peon was wantonly assaulted and beaten by a neighbour of the woman's, a man in no way connected with her. The aggressor was convicted and fined by the Magistrate. It is needless to say, that an occurrence of this kind would not have happened had the Peon belonged to the Police.

GOGO.

Operations performed by Mr. Apothecary GEORGE, in Medical charge Dispensary.

Population, 8,227. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868	.....	.....	.....	.....	.....
1869-70	542	542	.....	479	90·8

The total number vaccinated during the year was 542; among these, 48 were unsuccessful, and 15 doubtful or unknown, the remainder were successful. No annual return of vaccination was rendered for the twelve months of the past year, as vaccination was in abeyance; a quarterly return, from January to March 1869, has been rendered. The vaccinations were performed by the Medical Subordinates in charge; viz., Assistant

Apothecary W. Roane (General No. 97) from April to July 1869, Second Class Hospital Assistant Babajee Bhoonkie (General No. 310) in August, and from September to the end of the year by me. The population of Gogo is 8,227. The cost of the vaccination for lancets, paper, &c., is unknown, as these have been procured by indents, nor can the average cost of each vaccination, for the same reason, be ascertained. Vaccination sedulously performed with the best of lymph.

One case of small-pox occurred in April in a child who was not vaccinated: the child recovered. Vaccination is not received by the wealthier Hindoo community with the readiness displayed by Mussulmans. The children having to be brought to the Dispensary for vaccination, the Hindoo parents, probably for this reason, seem to be restrained from taking any trouble to secure the prophylactic; moreover, they say that total immunity from small-pox after vaccination has not been realized. They cannot be made to understand that vaccinating their children secures them from the virulence of the contagion, which, if it do not prove a prophylactic, yet is indubitably a modifier of the force of the virus, should their children be placed in contiguity with sufferers from the disease.

RAJKOTE.

One Government Vaccinator under the Civil Surgeon, Surgeon A. M. Blomfield, *(Officiating)*.

Population, 17,500. Total cost, Rs. 276, of which Government paid Rs. 156, and the Raja Rs. 120. Average cost of each vaccination, 3 annas and 7 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	308	.....	.....	259	86·3
1869-70.....	1,215	907	.....	1,000	82·3

This return includes those vaccinated in the station and town of Rajkote and neighbourhood. There is a considerable increase over the number vaccinated last year.

Those cases which have come under my notice, *i. e.* those vaccinated in the Military lines, have all presented good vesicles.

No cases of small-pox has been reported to me.

KURRACHEE.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon N. HOPKINS.

Population, 100,000. Total cost, Rs. 307-8-0, of which the sum of Rs. 180 was paid by Government, and Rs. 127-8-0 by the Municipality. The average cost of each successful vaccination, 1 anna and 5 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868	3,035	.....	.....	3,265	.....
1869-70.....	3,933	898	.....	3,422	91·9

The vaccination return for 1869-70 shows that there was a considerable increase in the number vaccinated over the previous year, and this increase would have been greater had it not been that in the month of July the lymph was bad, and I had to order complete suspension of all operations till I got a fresh supply; and again, during the period cholera was raging in Kurrachee, vaccination was not so vigorously carried on. The real increase in 1869-70 over 1868 is 898; the percentage of successful cases is lower than in the year 1868, owing somewhat to 271 of vaccinated patients in July being recorded unsuccessful through bad lymph. During the month of January 1869 there were 14 cases of small-pox, and again from January to April 1870 there were 66 cases of small-pox; and I regret to say that the disease is still in the town and suburbs to a certain extent, but every effort is being made to vaccinate all who have any communication with the affected persons. I have long been of opinion that there is work enough for two Vaccinators in Kurrachee; and I find that the late Dr. Ritchie, when Deputy Inspector General of Hospitals in Sind, strongly recommended that there should be two appointed. Amongst the inhabitants, some are strongly against vaccination; others are apathetic, and make no efforts to have their children vaccinated. An instance occurred only the other day; a man brought his child into the Civil Hospital with small-pox. I asked him why he had not had his child vaccinated. He replied that the man (Vaccinator) had not called; if he had he would have had his child vaccinated. It is impossible for one man to find out where every child is who ought to be vaccinated, if the parents are indifferent about the remedy; and the more numerous the Vaccinators are, the more likely are children of apathetic people to be found out and the remedy applied. I would strongly recommend that two Vaccinators be appointed to Kurrachee for twelve months to see the result.

The conduct of the Vaccinator has been generally good.

The Jail annual return shows that a large number of prisoners were vaccinated during the year. There was one case of small-pox in the Jail and one case of chicken-pox. To prevent the disease from spreading the prisoners were all vaccinated as soon as possible.

HYDRABAD.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon T. HOLMESTED.

Population, 40,000. Total cost, Rs. 216, of which the sum of Rs. 96 was paid by the Municipality, and Rs. 216 by Government. Average cost of each vaccination, 1 anna and 1 pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	1,847	.....	.....	1,827	98 8
1869-70.....	2,162	315	.....	2,153	99·5

During the past year 2,162 vaccinations were performed; this gives an increase of 315 over the preceding year.

2. Last year I had to report that the Amils were objecting to vaccination, and recommended it should be made compulsory. The objections, I am glad to say, are on the decrease, and the Vaccinator has seldom any complaints to make of obstruction: but my opinion remains the same, that vaccination ought to be compulsory, and the following measure would to a great extent make it so; viz., that no child be admitted into any school, or person into Government employ, who could not show the scars on the arms, or small-pox marks; "that every parent be fined, according to his means, who may suffer his child to catch small-pox, unless the child has the modified type and shows the scars on the arms."

3. The lymph has continued good throughout the year: no necessity has arisen to change or supplement it. Lymph has been given away occasionally. The Superintendent of Vaccination has sent for several supplies.

4. The Vaccinator is a good man, and does his work well. During the past year I wrote, asking that his pay might be slightly increased, so that he might be entitled to pension. The application was refused. I hope at some future period his case may again be taken into consideration.

5. I cannot at the present time suggest any further improvement.

6. No case of small-pox was seen by me during the year, or by my Hospital Assistant; but the Vaccinator reported, at the commencement of the hot weather, that

he had seen one or two suspicious cases amongst some Marwaree children. No case was reported as occurring amongst the inhabitants of Hydrabad.

7. The Vaccinator's name is Raymon Khan (General No. 233).

8. The population amongst whom vaccination is performed numbers 40,000.

9. The total cost of the vaccinations amounted to Rs. 216, of which Government paid Rs. 120, and the Municipality Rs. 96. The average cost of each vaccination was one anna and one pie. The lower classes of Europeans object frequently to have their children vaccinated from native ones. I find this prejudice much less frequent amongst the better classes : they appear to be satisfied that what is being done is the best, and that their opinion cannot be so good as that of a Medical Officer. From my reading and experience, I come to the conclusion that if the lymph is taken from a proper vesicle on to a clean lancet, and no blood contaminates it, there is then no fear of injuring any child by the venereal poison. During this year all telegraph employés received an order to be vaccinated. Amongst those who presented themselves before me were two young men, who had on their arms peculiarly good marks of previous vaccination ; notwithstanding that, they were vaccinated again, and to my surprise, in both of these cases, most successfully. From this the inference might arise that the protective properties are exhausted in some cases before the obliteration of the scar ; so every one in the vicinity of danger should be re-vaccinated every few years.

SHIKARPOOR.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon J. F. Keith, M.B. *(Acting)*.

Population 45,000. Total cost Rs. 289-12-0, of which the sum of Rs. 121-12-0 was paid by Government, and Rs. 168 by the Muncipality.

Average cost of each successful vaccination, 3 annas and 9 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868	1,240	.....	.....	1,188	.....
1869-70.....	1,224	.....	16	1,183	98·5

Compared with the preceding year there is a decrease of 16.

2. Great difficulty is met with in getting the people to bring their children to the Dispensary for the purpose of vaccination, and the Vaccinator has to go to their houses several times, and reason with them, before they can be induced to bring them out.

3. If the state of the lymph can be estimated from the kind of vesicle on the arm it must be very fair.

4. The conduct of the Vaccinator is good.

5. No improvement necessary.

6. There was no small-pox throughout the year.

KOTREE.

One Municipal Vaccinator under the Civil Surgeon, Assistant Surgeon JOHN ROCHE, M.D.

Population 20,626. Total cost, Rs. 268. Average cost of each vaccination, 5 annas and 10 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success, excluding Unknown.
		Increase.	Decrease.		
1868	1,150	.....	.....	1,089	94·7
1869-70.....	784	.....	366	707	93·2

The decrease in the number vaccinated during the official year 1869-70 is due principally to the prevalence of sickness in the last six months, and in part to the Vaccinator's death in September of cholera. The present Vaccinator, though a good man, was not so successful as to numbers in October and November as his predecessor might have been.

LARKHANA.

Operations performed by Third Class Hospital Assistant G. T. D'CRUZ (General No. 453), under Sub-Assistant Surgeon BALCRISHNA SUDAMJEE.

Population 8,000. Total cost, Rs. 134. Average cost of each successful vaccination, 6 annas and 2 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	410	.....	.....	385	93·9
1869-70	371	.....	39	350	94·3

In submitting the accompanying annual return, I beg to state that, from 1st April 1869 to 31st March 1870, the total number of children vaccinated amounted to 371. Of this number 350 cases were successful, and 21 doubtful and unsuccessful. At the commencement of December last, vaccination was stopped for three weeks, as the lymph had got bad, owing partly to the neglect of the parents in not taking care of their vaccinated children and in not observing the directions given, and partly to some of the vaccinated subjects being removed from Larkhana to adjoining villages. Since the receipt of fresh lymph from the Superintendent of Vaccination the operations have been carried on with great success. They have been performed by Third Class Hospital Assistant G. T. D'Cruz (General No. 453). Now and then children were procured with great difficulty.

No cases of small-pox came under my observation during the year under report, nor did the disease prevail in an epidemic form.

ADEN.

One Government Vaccinator under the Civil Surgeon, Surgeon R. W. James, M.D.

Population 25,000. Total cost Rs. 215. Average cost of each successful vaccination, 5 annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	725	.....	.....	563	77·6
1869-70.....	844	119	.....	692	81·9

The increase this year is again attributable to the large number of manumitted slaves brought to this station by Her Majesty's steamers, and as small-pox had broken out amongst them, vaccination was rigidly enforced, to check the spread of the disease, with the happiest result. Variola of a virulent type has been very prevalent during the year, 273 cases having been admitted into the small-pox ward; out of which 99 died. As the disease originally spread from direct importation, a species of quarantine has been instituted, and no one is now allowed to land from pilgrim steamers or ships and native craft till officially visited by the Health Officer or his Assistant. The supply of lymph has been constant throughout the year, and of very good quality: the non-success in 152 cases is due rather to the carelessness on the part of the patients and their friends, than to the quality of lymph. The Medical Officers of Her Majesty's 82nd and 12th Regiments have been supplied with lymph. From the former no report has been

received, but the latter states "the vesicles have been very good indeed." The Assistant Vaccinator, Anunt Vittul, had to be sent to Bombay on 18th September 1869, on medical certificate, and the present one, after two months' probation, was appointed to act. Both have done their work satisfactorily.

Statistics of Small-pox during the year 1869-70.

	Number.
Total number of cases of small-pox during the year 1869-70	273
Of the total number were vaccinated { In infancy	.....
Of the total number were vaccinated { In after life	.....
Of these died of small-pox who were vaccinated { In infancy	.....
Of these died of small-pox who were vaccinated { In after life	.....
Of the total number were unprotected	273
Of these died of small-pox	99
Total deaths from small-pox out of the total number of cases	99

BHOOJ.

Three Native States Vaccinators under Mr. Dorabjee Hormusjee, G.G.M.C.

Population 400,000. Total cost Rs. 799. Average cost of each successful vaccination, 1 rupee 6 annas and 8 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1868	624	.....	.....	565	90·5
1869-70.....	610	.....	14	550	90·1

From 1st April 1869 to 31st March 1870 there were 610 vaccinations performed at Bhooj, Mandavee, Moondra, and Anjar; of these, 550 were successful, and 60 unsuccessful or doubtful. During the past financial year there were 14 operations less than in 1868. In consequence of the points of dispute between His Highness the Rao and his Bhyads being not brought to any settlement, vaccination was again confined to the above mentioned places. During the present year one of the Vaccinators was discharged and another entertained. Jadowjee Hurchund, formerly a Compounder and Vaccinator attached to this Dispensary, is also entertained as a Vaccinator at Moondra. I hope to see vaccination extend during the next year, should the Bhyads be persuaded to allow vaccination in their own villages.

2. As for suggestions to increase the progress of vaccination in Kutch, it is necessary to consider what objections the people here have for vaccination, the removal of which will clear the way for increased vaccination. The first of them is that they have a firm belief in a goddess, which they call Silta Mátá, an image of which is generally found at the principal villages, where they take their affected children on the eighth or ninth day after the appearance of small-pox, and make them bow down before the goddess that she may extend her kindness towards them; second, when their children get an attack of small-pox after vaccination, they attribute it to the provocation of the goddess, and hence they would rather prefer to have small-pox than vaccination. These objections can only be removed as the people become more and more civilized, and as they understand the merits of vaccination and re-vaccination. This will be a work of time, and a radical change can only be expected after a long period. Besides these general objections, vaccination has been for some time past limited to his Highness' principal towns, as it could not be carried out at villages belonging to Bhyads, in which nearly one-third of the population of Kutch live. I intend, however, to make a fresh trial by sending Vaccinators to their villages, and will be able to give an account of the result in my next year's report.

3. There were a few cases of small-pox.

4. I have the honour, further, to inform you that, in order to give a fresh impetus to vaccination, His Highness has been pleased to increase the number of Vaccinators from three to four, and to appoint a Superintendent to watch their progress.

5. I have the honour to request you to supply me with some quantity of lymph in sealed tubes, so as to enable me to distribute them amongst the Vaccinators, in order to keep up vaccination continually.

TABLES

FOR

1st Quarter of 1869.

TABLE No. I.

Vaccination under Superintendents in British Territory.

Table showing the Number and Names of the Circles and their Superintendents; the Number of Vaccinators employed; the Total Vaccinations performed; the Total Number arranged according to Sex, Caste, Age, and Result; the Ratio of Successful to Total Vaccinated, for the 1st Quarter of 1869.

Number.	Circles.	Names of the Medical Officers, Superintendents of Vaccination.	Number of Native Vaccinators attached.	Total Number vaccinated, arranged according to Sex. Males.	Sex. Females.	Caste. Christian.	Caste. Hindoo.	Caste. Mussulman.	Caste. Parsee.	Caste. Other Castes.	Age. Under one year.	Age. Above one year.	Result. Successful.	Result. Unsuccessful.	Result. Doubtful.	Total.	Ratio per cent. of Successful to Number vaccinated.
1	Central ...	Assistant Surgeon Turnbull, M.D.	29*	6,629	5,965	3	11,082	568	...	941	4,409	8,185	12,086	252	256	12,594	95·9
		Assistant Surgeon W. R. Gordon, M.B. *(Acting)* ...	12†	1,183	926	13	1,784	264	...	48	1,150	959	1,854	115	140	2,109	87·9
2	Southern ...	Assistant Surgeon J. Raby .	22*	3,460	2,772	41	5,431	517	...	243	1,484	4,748	5,932	128	172	6,232	95·1
			9†	1,350	1,148	...	2,313	120	...	65	872	1,626	2,355	97	46	2,498	94·2
3	Northern ...	Dr. Muncherjee B. Colah (Uncovenanted).....	33	10,624	9,362	28	16,787	1,524	23	1,624	12,687	7,308	1,950	321	615	19,986	95·3
			2†	386	336	...	560	161	...	1	484	238	682	17	23	722	94·4
4	Western ...	Assistant Surgeon T. Cody.	14*	4,758	4,537	68	8,328	389	...	510	1,907	7,388	9,099	93	103	9,295	97·7
			2†	144	121	24	199	7	11	24	107	158	263	2	.....	265	99·2
5	Sind	Assist. Surgeon J. Ffolliott.	17†	5,001	4,004	...	1,145	7,416	1	443	3,289	5,716	8,772	32	201	9,005	97·4
			13‡	3,323	2,732	...	549	4,891	...	615	2,113	3,942	5,854	48	153	6,055	96·6
6	Kattiawar...	Surgeon E. R. Butler, M.D.	8*	1,545	1,305	...	2,648	195	...	7	1,226	1,624	2,672	45	133	2,850	93·7
7	Rewa Kanta.	Assistant Surgeon J. T. Welsh, M.D	5*	1,239	1,317	...	2,526	27	...	3	831	1,725	2,408	75	73	2,556	94·2
8	Presidency. .	Sub-Assist. Surgeon Anunta Chandroba	6*	1,811	1,211	356	1,738	517	353	58	1,218	1,804	2,332	278	412	3,022	77·1
		Total.....	172	41,453	35,736	533	55,090	16,596	388	4,582	31,768	45,421	73,359	1,503	2,327	77,189	95·0

* Government Vaccinators. † Municipal Vaccinators. ‡ Local Vaccinators.

TABLE No. II.

Vaccination under Superintendents and others in Native Territory.

Table of Vaccination through the Agency of Native Chiefs, arranged according to the Circles of Vaccination, and showing Details as in Table No. I., for the 1st Quarter of 1869.

Number.	Circles and Stations.	Medical Officers.	Number of Native Vaccinators attached.	Total Number vaccinated, arranged according to													Total.	Ratio per cent. of Successful to Number vaccinated.
				Sex.		Caste.					Age.		Result.					
				Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
1	Central	Assistant Surgeon W. R. Gordon, M.B.	2	302	319	...	561	56	...	4	210	411	601	18	2	621	96·7
2	Southern.....	Assistant Surgeon J. Raby ...	23	2,929	2,479	14	4,955	300	...	139	1,544	3,864	5,184	110	114	5,408	95·8
3	Northern.....	Dr. Muncherjee B. Colah	12	3,066	2,751	...	4,960	449	4	404	3,164	2,653	5,230	221	366	5,817	89·9
4	Western	Assistant Surgeon T. Cody ...	2	949	840	31	1,706	52	...	...	405	1,384	1,665	81	43	1,789	96·9
5	Sind.....	Assistant Surgeon J. Ffolliott.	1	333	185	...	70	426	...	22	143	375	512	...	6	518	98·8
6	Kattiawar ...	Surgeon E. R. Butler, M.D. ...	35	5,693	4,799	...	9,261	1,211	...	20	3,858	6,634	9,655	442	395	10,492	92·0
7	Rewa Kanta..	Assistant Surgeon J. T. Welsh, M.D.	7	1,226	1,144	...	2,225	105	...	40	735	1,635	2,236	72	62	2,370	94·3
8	Kutch	Mr. Dorabjee Hormusjee, G.G.M.C.	4	93	115	...	105	101	2	...	69	139	203	3	2	208	97·6
		Total.....	86	14,591	12,632	45	23,843	2,700	6	629	10,128	17,095	25,286	947	990	27,223	92·9

TABLE No. III.

Vaccinations under Civil Surgeons and Others.

Table of Vaccination under Civil Surgeons and others, arranged acccording to Divisions, and showing the Details as in Table No. I., for the 1st Quarter of 1869.

Number.	Division of Deputy Inspectors General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached.	Total Number vaccinated, arranged according to													Total.	Ratio per cent. of Successful to Number vaccinated.
				Sex.		Caste.					Age.		Result.					
				Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful.	Doubtful.		
1	Presidency.	Tanna	1*	48	46	24	52	7	11	.....	41	53	92	2	.....	94	97·8
		Rutnagherry	1†	169	88	...	204	53	...	.....	18	239	175	31	51	257	68·1
		Carwar	1†	73	52	12	98	13	2	.....	29	96	111	14	.....	125	90·4
		Vingorla	...	77	73	8	137	5	...	.....	45	105	131	5	14	150	87·3
		Surat	1†	316	286	...	441	65	76	20	360	242	528	19	55	602	87·7
		Broach	1†	204	133	1	222	64	50	.....	182	155	318	6	13	337	94·3
		Alibaugh	...	91	72	...	137	11	...	15	40	123	134	20	9	163	82·2
		Bandora	...	10	6	3	12	1	...	.....	1	15	13	2	1	16	81·2
		Coorla	...	34	21	27	12	16	...	.....	23	32	32	16	7	55	58·1
		Oorun	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Callian	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Bhewndy	...	5	4	...	7	2	...	.....	3	6	7	.....	2	9	77·7
		Dapoolee	...	27	26	...	53	.....	...	.....	3	50	40	1	12	53	75·5
		Sawunt Warree	...	5	4	...	7	2	...	.....	3	6	7	.....	2	9	77·7
		Honore	...	12	4	6	10	.....	...	.....	4	12	16	.....	.....	16	100·
		Total	5	1,071	815	81	1,392	239	139	35	752	1,134	1,604	116	166	1,886	85·1
	Poona	Poona	1†	264	217	30	338	100	13	.....	200	281	413	34	34	481	85·8
		Poona Charitable Dispensary	...	36	24	...	50	7	3	.....	27	33	39	9	12	60	65·0
		Ahmednuggur	1†	136	55	...	158	20	...	13	134	57	174	5	12	191	91·0
		Kurrar	...	49	33	1	73	8	...	.....	15	67	69	4	9	82	84·1
		Sircy	...	15	15	9	13	8	...	.....	2	28	30	.....	.....	30	100·
		Barsee Dispensary	...	6	5	...	11	.....	...	.....	6	5	9	2	.....	11	81·8
		Kulladghee	1*	79	49	6	77	29	...	16	88	40	124	.....	4	128	96·8
		Sattara	1†	503	387	11	820	45	...	14	321	569	794	10	86	890	89·2

2	Poona—*continued.*	Sholapoor	1†	104	91	1	121	70	2	1	161	34	163	24	8	195	83·5
		Sholapoor Charitable Dispensary	...	10	8	...	5	13	...	.....	9	9	17	1	.....	18	94·4
		Dhoolia	1†	154	119	2	216	30	...	25	172	101	257	11	5	273	94·1
		Nassick	1†	123	105	28	192	8	...	.....	62	166	216	7	5	228	94·7
		Bagulkote	...	28	16	...	33	11	...	.....	40	4	44	.....	.....	44	100·
		Punderpoor	...	7	3	...	10	.....	...	.....	1	9	6	3	1	10	60·0
		Waie	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Moondegode	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Belgaum	1†	87	53	...	116	2	...	.....	79	61	138	2	.....	140	98·5
		Dharwar	1†	80	73	4	113	35	1	.....	72	81	114	35	4	153	74·5
		Kolhapoor	1‡	385	304	...	681	8	...	.....	110	579	680	3	6	689	98·6
		Kolhapoor Dispensary	...	64	70	1	119	14	...	.....	42	92	133	.....	1	134	99·2
		Gokak	...	59	58	...	73	44	...	.....	48	69	72	21	24	117	61·5
		Peint	...	1	1	...	2	.....	...	.....	.....	2	.....	2	.....	2	.....
		Hullial	...	5	6	...	9	2	...	.....	2	9	10	.....	1	11	90·9
		Dhurrumgaum	...	23	17	1	23	16	...	.....	18	22	35	5	.....	40	87·5
		Hooblee	...	58	51	...	99	10	...	.....	13	96	104	5	.....	109	95·4
		Soopa	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Gudduck	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Yellapoor	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Total	10	2,276	1,760	94	3,352	502	19	69	1,622	2,414	3,641	183	212	4,036	90·2
3	Northern	Bulsar	...	2	2	...	.....	2	2	.....	2	2	.....	.....	4	4	.....
		Ahmedabad	2*	660	579	18	877	321	22	1	716	523	1,201	25	13	1,239	96·8
		Gogo	...	34	24	...	30	28	...	.....	12	46	56	1	1	58	96·5
		Kaira	1†	153	90	...	221	7	1	14	224	19	208	6	29	243	81·4
		Rajkote	1†	124	126	2	210	30	4	4	164	86	231	9	10	250	92·4
		Dholka	...	31	33	...	48	16	...	.....	57	7	63	.....	1	64	98·7
		Veerumgaum	...	34	20	...	51	3	...	.....	42	12	53	1	.....	54	98·1
		Dakore	...	18	14	...	31	1	...	.....	13	19	29	.....	3	32	90·6
		Borsud	...	16	6	...	1	21	...	.....	15	7	15	4	3	22	68·1
		Neriad	...	7	1	...	6	2	...	.....	5	3	8	.....	.....	8	100·
		Dholera	...	7	12	...	14	5	...	.....	11	8	18	1	.....	19	94·7
		Total	4	1,086	907	20	1,489	436	29	19	1,261	732	1,882	47	64	1,993	94·4
4	Sind	Kurrachee	1†	898	695	120	489	729	55	200	649	944	1,535	31	27	1,593	96·3
		Kurrachee Jail	...	4	.....	...	4	4	...	.....	.....	4	4	.....	.....	4	100·
		Kurrachee Dispensary	...	13	12	...	9	13	3	.....	10	15	13	9	3	25	52·0
		Hydrabad	1†	364	200	6	270	247	...	41	280	284	561	2	1	564	99·4
		Shikarpoor	1†	160	133	...	167	126	...	.....	281	12	284	4	5	293	96·9
		Kotree	1*	160	138	3	13	267	...	15	268	30	287	5	6	298	96·3

TABLE No. III.—*continued.*

Number.	Divisions of Deputy Inspectors General of Hospitals.	Civil Stations.	Number of Native Vaccinators attached.	Total Number vaccinated, arranged according to Sex. Males.	Sex. Females.	Caste. Christian.	Caste. Hindoo.	Caste. Mussulman.	Caste. Parsee.	Caste. Other Castes.	Age. Under one year.	Age. Above one year.	Result. Successful.	Result. Unsuccessful.	Result. Doubtful.	Total.	Ratio per cent of Successful to Number vaccinated.
4	Sind—*continued.*	Sukkur Dispensary	...	142	33	2	67	105	...	1	77	98	175	.....	.....	175	100·
		Jacobabad Civil Hospital.	...	6	2	1	1	6	...	.....	2	6	8	.....	.....	8	100·
		Larkhana Dispensary ...	*	80	43	...	30	93	...	.....	84	39	117	.....	6	123	95·1
		Mehur do. ...	...	11	10	...	9	12	...	.....	16	5	21	.....	.....	21	100·
		Sehwan do. ...	...	49	37	...	34	52	...	.....	41	45	80	6	.....	86	95·3
		Jerruck do. ...	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Rohree do. ...	...	32	23	...	27	28	...	.....	33	22	55	.....	.....	55	100·
		Oomercote do. ...	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Nuggur Parkur do. ...	...	38	43	...	54	27	...	.....	20	61	70	1	10	81	86·4
		Halla do. ...	...	5	3	...	3	5	...	.....	8	.....	8	.....	.....	8	100·
		Mahomed Khan's Tanda do. ...	...	.....	.....	...	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....
		Bola Khan's Tanda do. ...	...	16	6	...	5	17	...	.....	1	21	21	.....	1	22	95·4
		Meerpoor Buttora do. ...	...	13	12	...	20	5	...	.....	14	11	24	1	.....	25	96·0
		Alliyaryka Tanda do. ...	...	44	44	...	65	23	...	.....	28	60	88	.....	.....	88	100·
		Ketty Bunder do. ...	...	3	3	...	4	2	...	.....	1	5	.....	6	.....	6	.....
		Tarooshah do. ...	...	21	8	2	8	19	...	.....	16	13	28	.....	1	29	96·5
		Tatta do. ...	...	197	150	...	164	183	...	.....	47	300	338	6	3	347	97·4
		Mittee do. ...	...	21	24	...	46	2	...	.....	2	46	.....	2	.....	48	95·8
		Kippra do. ...	...	34	16	...	46	4	...	.....	14	36	6	.....	.....	50	88·0
		Total.....	4	2,314	1,635	134	1,531	1,969	58	257	1,892	2,057	3,807	77	65	3,949	96·4
5	Aden	Aden	1†	201	49	1	7	11	...	231	36	214	187	63	.....	250	74·8
		Grand Total.....	24	6,948	5,166	330	7,771	3,157	245	611	5,563	6,551	11,121	486	507	12,114	91·8

* 5 Municipal Vaccinators· † 18 Government Vaccinators. ‡ 1 Native State's Vaccinator.

TABLE No. IV.

General Abstract of Vaccination for the 1st Quarter of 1869.

Designation of Tables.	Number of Vaccinators.	Total Number vaccinated, arranged according to Sex. Males.	Sex. Females.	Caste. Christian.	Caste. Hindoo.	Caste. Mussulman.	Caste. Parsee.	Caste. Other Castes.	Age. Under one year.	Age. Above one year.	Result. Successful.	Result. Unsuccessful.	Result. Doubtful.	Total.	Ratio per cent. of Successful to Number vaccinated.
No. 1.—Vaccination under Superintendents in British Territory by Government Establishment	134	35,067	30,473	496	49,685	11,153	377	3,829	27,042	38,498	62,351	1,224	1,965	65,540	95·1
Ditto by Local Funds ditto	13	3,323	2,732	...	549	4,891	...	615	2,113	3,942	5,854	48	153	6,055	96·6
Ditto by Municipalities ditto	29	3,883	3,248	58	5,746	1,140	33	154	3,597	3,534	6,642	261	228	7,131	93·1
No. 2.—Ditto and others in Native Territory	86	14,591	12,632	45	23,843	2,700	6	629	10,128	17,095	25,286	947	990	27,223	92·9
No. 3.—Ditto under Civil Surgeons	18	4,113	2,952	218	4,403	1,677	204	563	3,424	3,641	6,407	313	345	7,065	90·6
Ditto in Dispensaries where there are no Vaccinators	...	1,474	1,046	60	1,591	834	8	27	899	1,621	2,239	143	138	2,520	88·8
Total	280	62,451	53,083	877	85,817	22,395	628	5,817	47,203	68,331	108,779	2,936	3,819	115,534	94·1

TABLE No. VIII.

Table of Vaccinations in the Bombay Army for the 1st Quarter 1869.

		Number Vaccinated.	
		Europeans.	Natives.
Native Regiments.	Regiments	7	717
	Lines	1	122
	Bazaars	.....	43
	Cantonment Bazaars	35	737
	Ordnance and other Departments	2	65
	Staff and Details	3	269
	Total	48	1,953
	Grand Total	2,001	

TABLES

FOR

1869-70.

A.—VACCINE DEPARTMENT.

STATEMENT No. I.—Showing particulars of Vaccination in each Circle of Superintendence in Bombay Presidency during the Year 1869-70.

1	2	3		4		5		6	7	8	9												10				11		12
											Primary Vaccinations.												Re-Vaccinations.				Percentage of Successful Cases, excluding those Doubtful from the Total.		
											A.		B.					C.				D.	A.	B.	C.	D.			
											Sex.		Caste.					Age.		Results.			Results.						
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1869-70.	1868.	Number of Vaccinators. 1869-70.	1868.	Total Number of Persons vaccinated. 1869-70.	1868.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.	Population of Area included in last column.	Name of portion of District or of Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	In Primary Vaccination.	In Secondary Vaccination.	Average Number of Persons vaccinated by each Vaccinator.
									Sq. Miles.																					
GENERAL.	Assistant Surgeon.	..	..	..	..	2,346	2979	Ahmednuggur Collectorate.	544	Nuggur	1,211	1,135	4	1,984	96	..	262	489	1,857	2,241	63	42	2,346	..	..	..	..	97·2		
		..	..	..	..		457		590	Palnair																			
		..	..	..	..	..	1,231		550	Jamkheir	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
		..	..	..	..	..	378		500	Shreegoonda .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
		..	..	4	5	2,128	...		408	Kurjut	1,084	1,044	..	1,773	96	..	259	1,731	397	1,904	122	102	2,128	..	..	..	..	93·9		
		..	..	..	..	1,493	584		621	Newassa	768	725	1	1,349	64	..	79	379	1,114	1,480	9	4	1,493	..	..	..	..	99·4		
		..	..	..	..	1,738	..		505	Kopurgaum..	914	824	2	1,465	74	..	197	497	1,241	1,703	23	12	1,738	..	..	..	..	98·6		
		..	..	..	..	851	1,982		475	Sungumnair .	434	417	..	731	46	..	74	326	525	828	14	9	851	..	..	..	..	98·3		
		..	..	..	..	..	..		500	Rahooree	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
		..	..	..	..	..	2,858		682	Sheogaon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
		..	..	..	..	1,765	532	Sholapoor Collectorate.	1,672	Sholapoor..	934	831	..	1,453	128	..	184	565	1,200	1,747	10	8	1,765	..	..	..	..	99·5		
		..	..	..	..		902		616	Punderpoor																			
		..	..	4	3	1,632	870		1,167	Barsee	879	753	..	1,414	132	..	86	706	926	1,602	..	30	1,632	..	..	..	..	100·		
		..	..	..	..	..	..		616	Sangola.....								*Vide* Municipal Vaccinators.											
		..	..	..	..	2,875	..		1,680	Kurmulla	1,525	1,350	..	2,588	135	..	152	781	2,094	2,673	115	87	2,875	..	..	..	..	96·5		
		..	..	..	..	2,402	1,907		1,200	Marheh	1,189	1,213	..	2,105	64	..	233	1,656	746	2,386	8	8	2,402	..	..	..	..	99·5		
		..	..	..	..	1,160	1,726	Poona Collectorate.	552	Joonere.....	576	584	..	1,008	68	..	84	301	859	1,063	11	86	1,160	..	..	..	..	98·9		
		..	..	..	..	774	474		525	Indapoor	416	358	..	589	20	..	165	412	362	714	35	25	774	..	..	..	..	95·3		
		..	..	..	..	1,183	1,606		657	Kheir.....	620	563	..	993	31	..	159	237	946	984	180	19	1,183	..	..	..	..	84·5		
		..	..	6	6	512	591		448	Seroor	252	260	..	403	10	..	99	119	393	384	128	..	512	..	..	..	..	75·		
		..	..	..	..	2,936	1,906		371	Poorundhur..	1,532	1,404	..	2,457	37	..	442	1,664	1,272	2,909	4	23	2,936	..	..	..	..	99·8		
		..	..	..	..	616	106		844	Bimthurry ..	311	302	..	493	9	..	114	266	350	463	103	50	616	..	..	..	..	81·8		
		..	..	..	..	1,880	3,081		561	Havoilly	948	932	..	1,631	29	..	220	583	1,297	1,686	143	51	1,880	..	..	..	..	92·2		
		..	..	..	..	600	..		314	Mawal	296	304	..	547	3	..	50	138	462	556	38	6	600	..	..	..	..	93·6		

W. R. Gordon, M.B.	..	..	..	..	2,126	1,132	Nassick Collectorate.	400	67,846	Niphar	1,040	1,086	..	1,648	69	..	409	707	1,419	1,879	44	203	2,126	..	..	..	..	97·7					1,522
	..	..	..	..	769	..		401	47,868	Sawergaon	400	369	..	658	25	..	86	174	595	762	5	2	769	..	..	..	..	99·3						
	..	..	..	..	...	..		1,248	19,778	Nandgaon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	6	5	2,703	1,331		966	88,537	Baglan	1,429	1,274	..	2,641	34	3	25	1,063	1,640	2,656	20	27	2,703	..	..	..	..	99·2						
	..	..	..	..	1,604	2,046		775	54,825	Malligaum	802	802	..	1,408	123	..	73	410	1,194	1,534	45	25	1,604	..	..	..	..	97·1						
	..	..	..	..	1,468	450		577	53,535	Ankola	750	718	..	1,276	19	..	73	599	869	1,405	33	30	1,468	..	..	..	..	97·7						
	..	..	..	..	1,817	1,349		440	63,200	Sinnur	873	944	..	1,612	43	..	162	583	1,234	1,596	42	179	1,817	..	..	..	..	97·4						
	..	..	..	..	..	..		2,106	77,331	Nassick	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	1,683	1,996		716	59,897	Dindoorée	847	836	..	1,493	32	..	158	628	1,055	1,604	10	69	1,683	..	..	..	..	99·3						
	..	..	..	..	..	810		756	36,678	Chandore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	912		1,692	46,904	Egutpoora	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	1,572	Kulladghi Collectorate.	864	85,703	Hoongonda	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	..		1,350	81,643	Baghawarree	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	1,714	..		1,555	108,696	Badame	868	846	..	1,592	114	..	8	981	733	1,666	6	42	1,714	..	..	..	..	99·6						
	..	..	3	3	2,075	2,307		2,376	97,891	Bagulcote	1,108	967	..	1,954	98	..	23	1,028	1,047	2,022	9	44	2,075	..	..	..	..	99·5						
	..	..	..	..	..	..		726	74,887	Moodebahal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	1,022	1,699		1,386	64,020	Beejapoor	552	470	..	965	48	..	9	639	383	982	9	31	1,022	..	..	..	..	99·						
	..	..	..	..	4,407	1,110		1,683	95,986	Indee	2,367	2,040	..	3,409	477	..	521	489	3,918	4,407	..	..	4,407	..	..	..	..	100·						
	..	..	..	..	..	..		1,555	98,990	Shindghee	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	1,211	1337 / 1309	Khandeish Collectorate.	874	111,395	Sowda	594	617	..	1,133	52	..	26	363	848	1,174	24	13	1,211	..	..	..	..	98·						
								566	69,569	Bhosawul																								
	..	..	..	..	1,572	1,824		323	51,060	Nusserabad	785	787	1	1,499	47	..	25	736	836	1,305	55	212	1,572	..	..	..	..	99·6						
	..	..	..	..	770	..		762	26,608	Seerpoor	391	379	..	757	13	..	..	275	495	762	3	5	770	..	..	..	..	99·6						
	..	..	..	..	..	..		474	34,506	Shadah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	778		459	68,262	Errundole	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	..		449	35,631	Chalesgaum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	6	7	..	..		506	56,706	Virdul	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	..		518	55,266	Jamneir	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	..		1,286	21,750	Tulloda	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	..	1,967		759	63,672	Dhoolia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	404	1,494		539	68,853	Pachora	207	197	..	377	27	..	..	129	275	404	..	..	404	..	..	..	..	100·						
	..	..	..	..	..	1,428		504	41,843	Chopra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..						
	..	..	..	..	1,176	1,382		1,234	46,128	Pimpulnair	601	575	..	1,129	26	..	21	453	723	1,155	13	8	1,176	..	..	..	..	98·8						
	..	..	..	..	2,231	494		538	73,415	Amulnair	1,172	1,059	..	1,943	226	..	62	507	1,724	2,216	4	11	2,231	..	..	..	..	99·8						
	..	..	..	..	2,218	..		680	36,544	Nundoorbar	1,122	1,096	..	2,133	85	..	..	124	2,094	2,114	30	74	2,218	..	..	..	..	98·6						
	..	..	1	1	1,023	545	Native State.	420	61,000	Ankulcote	558	465	..	818	129	..	76	177	846	948	75	..	1,023	..	..	..	..	92·6						
	..	..	1	1	1,612	1,057		960	26,167	Peint	789	823	..	1,573	21	..	13	776	836	1,560	41	11	1,612	..	..	..	..	97·4						
	..	..	1	..	930	..	Nuggur		27,735	Nuggur Town	509	421	23	672	104	1	130	525	405	852	41	37	930	..	..	..	..	95·4						
	..	..	2	2	1,651	1,509	Poona		80,416	Poona City	937	714	5	1,530	112	2	2	905	749	1,380	60	211	1,651	..	..	..	..	95·8						
	..	..	1	1	213	49	Indapoor		10,636	Indapoor Town	95	118	4	165	19	..	25	83	130	181	28	4	213	..	..	..	..	86·6						
	..	..	1	1	417	771	Barmuttee		9,811	Barmuttee do.	219	198	..	385	12	..	20	151	266	386	16	15	417	..	..	..	..	96·						
	..	..	1	..	18	..	Joonere		Unkn.	Joonere do.	3	15	..	4	13	..	1	4	14	13	..	5	18	..	..	..	..	100·						
	..	..	1	1	564	75	Nassick		25,000	Nassick do.	288	276	30	455	63	..	16	296	268	432	71	41	564	..	..	..	..	82·6						
	..	..	1	1	334	432	Beejapoor		8,891	Beejapoor do.	186	148	..	265	24	..	45	196	138	322	7	5	334	..	..	..	..	97·8						
	..	..	1	..	568	..	Bagulkote		15,938	Bagulkote do.	265	303	..	437	105	..	26	322	246	518	35	20	568	..	..	..	..	93·6						
	..	..	1	1	637	129	Kulladghi		6,032	Kulladghee do.	380	257	..	519	85	..	33	338	299	635	..	2	637	..	..	..	..	100·						
	..	..	1	1	653	737	Sholapoor		33,977	Sholapoor do.	352	301	1	498	130	..	24	510	143	594	5	54	653	..	..	..	..	99·1						
	..	..	1	1	661	394	Barsee		14,442	Barsee do.	354	307	..	580	58	..	23	373	288	602	11	48	661	..	..	..	..	98·2						
	..	..	1	1	537	1,103	Punderpoor		15,597	Punderpoor do.	292	245	..	491	15	..	31	316	221	384	68	85	537	..	..	..	..	84·9						
	..	..	1	1	792	754	Sangola		11,717	Sangola do.	406	386	..	736	21	..	35	336	456	664	61	67	792	..	..	..	..	91·6						
Total	..	..	45	43	63,471	60,512					35,433	33,038	71	59,838	3,511	6	5,045	26,046	42,425	64,452	1882	2137	68,471	..	..	..	..	97·1						1,522

1	2	3		4		5		6		7	8	9																10				11		12
												Primary Vaccinations.																Re-Vaccinations.				Percentage of Successful Cases, excluding those Doubtful from the Total		
												A		B.					C.					D.				A.	B.	C.	D.			
												Sex.		Caste.					Age.		Results.							Results.						
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1869-70.	Number of Native Superintendents. 1868.	Number of Vaccinators. 1869-70.	Number of Vaccinators. 1868.	Total Number of Persons vaccinated. 1869-70.	Total Number of Persons vaccinated. 1868.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.		Population of Area included in last column.	Name of portion of District or of Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	In Primary Vaccinations.	In Secondary Vaccinations.	Average Number of Persons vaccinated by each Vaccinator.
		..	..	..	2	Vaccinators in Superintendent's Office.																												
Southern.	Assistant Surgeon.	..	..	1	1	1,749	1,538	Belgaum Collectorate.	Sq. Miles 11,814.	753,180	Belgaum	966	783	8	1,649	64	..	28	422	1,327	1,670	40	39	1,749	..	..	..	..	97·6				
		..	..	1	1	404	1,337				Sumpgaum ..	233	171	..	376	28	..	..	108	296	401	1	2	404	..	..	..	..	99·7				
		..	..	1	1	1,735	1,174				Pursghur	886	849	..	1,561	148	..	26	334	1,401	1,728	5	2	1,735	..	..	..	..	99·7				
		..	..	1	1	1,579	1,373				Gokak	902	667	..	1,423	111	..	45	704	875	1,544	14	21	1,579	..	..	..	..	99·1				
		..	..	1	1	1,738	1,390				Chichoree	910	828	..	1,576	136	..	26	209	1,529	1,705	4	29	1,738	..	..	..	..	99·7				
		..	..	1	1	1,435	1,085				Beedee	820	615	39	1,286	18	..	92	547	888	1,376	20	39	1,435	..	..	..	..	98·4				
		..	..	1	1	1,710	1,289	Dharwar Collectorate.	Sq. Miles 5,195.	860,224	Dharwar	929	781	7	1,427	236	..	40	295	1,415	1,657	33	20	1,710	..	..	..	..	98·0				
		..	..	1	1	1,472	1,203				Nowlgoond ..	797	675	..	1,312	114	..	46	172	1,300	1,447	15	10	1,472	..	..	..	..	98·9				
		..	..	1	..	1,366	..				Bunkapoor ..	689	677	..	1,156	198	..	12	212	1,154	1,273	29	64	1,366	..	..	..	..	97·7				
		..	..	1	1	1,410	1,040				Hongul	789	621	..	1,133	268	..	9	57	1,353	1,332	69	9	1,410	..	..		..	95·7				
		..	..	1	..	860	..				Hooblee.....	450	410	..	754	86	..	20	158	702	843	15	2	860	..	..	..	..	98·2				
		..	..	1	..	333	..				Ranebbednore.	197	136	..	163	170	..	..	..	333	300	26	7	333	..	..	..	..	92·0				
		..	..	1	1	564	915				Koade	340	224	..	495	69	..	..	22	542	513	24	27	564	..	..	..	..	95·5				
		..	..	1	..	947	..				Kurjagee	500	447	..	860	70	..	17	198	749	873	29	45	947	..	..	..	..	96·7				
		..	..	1	1	1,459	741				Kulghutgee ..	804	655	32	1,315	93	..	19	117	1,342	1,408	23	28	1,459	..	..	..	..	98·3				
		..	..	1	..	618	..				Roan	341	277	..	579	35	..	4	261	357	588	13	17	618	..	..	..	..	97·8				
		..	..	1	1	1,308	974	North Canara. Collectorate.	Sq. Miles 4,314.	367,582	Coompta	770	538	80	1,117	24	..	87	44	1,264	1,238	61	9	1,308	..	..	..	..	95·3				
		..	..	1	1	1,245	1,194				Honore	694	551	91	1,010	38	..	106	92	1,153	1,162	83	..	1,245	..	..	..	..	93·3				
		..	..	1	1	650	1,595				Sircy	390	260	..	565	9	..	76	6	644	623	15	12	650	..	..	..	..	97·6				
		..	..	1	..	581	..				Yellapoor	322	259	..	565	16	..	..	35	546	500	49	32	581	..	..	..	..	91·0				
		..	..	..	..	323	..				Siddapoor....	169	154	..	279	..	..	44	35	288	290	26	7	323	..	..	..	..	91·7				
		..	..	1	1	1,152	1,039				Hullial	651	501	65	950	122	..	15	289	863	1,114	17	21	1,152	..	..	..	..	98·4				
		..	..	..	..	..	..	Sattara Collectorate.	Sq. Miles 8,349	970,442	Sattara	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..				
		..	..	1	..	339	..				Jowlee	177	162	..	310	1	..	28	57	282	305	2	32	339	..	..	..	..	99·3				
		..	..	1	1	539	881				Waee	273	266	..	459	6	..	74	180	359	493	34	12	539	..	..	..	..	91·6				
		..	..	1	1	2,789	1,330				Pulton	1,395	1,394	..	2,518	25	..	246	306	2,483	2,652	57	80	2,789	..	..	..	..	97·8				
		..	..	1	..	1,112	..				Kurrar	593	519	..	973	25	..	114	244	868	1,030	41	41	1,112	..	..	..	..	96·1				
		..	..	1	1	1,189	1,180				Walwa	633	556	..	1,059	34	..	96	594	595	1,040	26	123	1,189	..	..	..	..	97·5				
		..	..	1	1	1,609	1,426				Tasgaum	938	671	..	1,375	65	..	169	1,490	119	1,578	21	10	16,09	..	..	..	..	98·6				
		..	..	1	1	127	1,208				Moan	67	60	..	113	..	..	14	56	71	119	6	2	127	..	..	..	..	95·				

J. Raby,	..	..	1	1	772	741	Jaghirs in Bolgaum Collectorate.	1,207	1,73,333	Sanglee	392	380	..	683	89	..	..	430	342	723	42	7	772	..	..	..	94·3		1,020
	..	..	1	1	983	636		574	79,779	Merruz 1st	518	465	..	803	180	..	..	859	124	974	9	..	983	..	..	..	99·0		
	..	..	1	1	408	338		197	47,060	Do. 2nd	233	175	..	395	13	..	..	314	94	385	14	9	408	..	..	..	96·4		
	..	..	1	1	176	482		271	29,786	Koorundwar 1st	87	89	..	147	26	..	3	10	166	176	..	..	176	..	..	..	100·		
	..	..	1	1	384	404		177	22,890	Do. 2nd.	211	173	..	261	91	..	32	47	337	350	15	19	384	..	..	..	95·9		
	..	..	1	1	686	450		317	49,829	Moodhole	413	273	..	654	32	..	..	27	659	620	32	34	686	..	..	..	95·		
	..	..	1	1	769	1,022		198	33,000	Ramdroog	431	338	..	717	52	..	..	191	638	743	..	26	769	..	..	..	100·		
	..	..	1	1	454	423		..	120,051	Jumkhundee	252	202	..	412	42	..	..	255	199	413	36	5	454	..	..	..	91·9		
	..	..	1	1	887	676	Jaghirs in Sattara Collec.	1,044	111,729	Bhore	492	395	..	843	1	..	43	142	745	879	..	8	887	..	..	..	100·		
	..	..	1	1	481	466		266	58,980	Attapadee	293	188	..	468	12	..	1	60	421	479	..	2	481	..	..	..	100·		
	..	..	1	1	925	880		1,620	56,845	Jhutt	468	457	..	872	41	..	12	387	538	838	63	24	925	..	..	..	93·		
	..	..	1	1	1,093	913		512	49,314	Phulton	542	551	..	886	52	..	155	735	358	986	105	2	1,093	..	..	..	90·3		
	..	..	1	1	1,611	1,890	Kolapoor State.	360	14,748	Veshalghur	868	743	..	1,294	53	..	264	158	1,453	1,583	6	22	1,611	..	..	..	99·6		
	..	..	1	1	896	663		567	43,543	Echulkurnjee	477	419	..	807	29	..	60	611	285	836	20	40	896	..	..	..	97·6		
	..	..	1	1	689	749		252	31,287	Kagul	374	315	..	607	18	..	64	238	451	676	10	3	689	..	..	..	98·5		
	..	..	1	1	1,221	1,001		486	73,393	Gudhingluz	675	546	..	1,159	53	..	9	324	897	1,157	37	27	1,221	..	..	..	96·9		
	..	..	1	1	1,375	1,262		486	29,845	Bolorah	662	713	..	1,347	5	..	23	388	987	1,348	8	19	1,375	..	..	..	99·4		
	..	..	1	1	1,566	1,117		540	66,463	Pannalla	833	733	..	1,449	26	..	81	517	1,049	1,534	10	22	1,566	..	..	..	92·8		
	..	..	1	1	1,518	1,343		900	54,794	Bhooderghur	773	745	8	1,387	28	..	95	164	1,354	1,501	14	3	1,518	..	..	..	99·		
	..	..	1	1	1,026	652		243	105,022	Sheerole	548	483	..	964	44	..	18	436	590	987	5	34	1,026	..	..	..	99·4		
	..	..	1	1	544	504		180	21,653	Torgull	205	249	..	528	16	..	..	57	487	527	..	17	544	..	..	..	100·		
	..	..	1	1	943	1,201		598	24,484	Auzara	482	461	3	883	20	..	37	246	697	893	15	35	943	..	..	..	98·3		
	..	..	1	1	3,165	2,617		506	114,445	Kolapoor Station.	1,659	1,506	4	3,007	106	..	48	666	2,499	3,107	37	21	3,165	..	..	..	98·8		
	..	..	1	..	870	..	Dharwar Sattara Collectorate. Municipal Towns.		67,524	Khatow	468	402	..	806	33	..	31	394	476	826	24	20	870	..	..	..	97·4		
	..	..	1	1	972	1,256			77,367	Khanapoor	516	456	..	915	19	..	38	563	409	924	48	..	972	..	..	..	95·		
	..	..	1	1	1,124	1,246			63,488	Moan	548	576	..	954	37	..	133	447	677	1,031	45	48	1,124	..	..	..	95·8		
	..	..	1	1	1,087	1,045			113,295	Kurrar	610	477	..	1,034	19	..	34	29	1,058	1,087	..	..	1,087	..	..	..	100·		
	..	..	1	1	1,074	1,701			2,274	Koragaum	564	510	..	956	41	..	77	318	756	945	81	48	1,074	..	..	..	92·2		
	..	..	1	1	688	754			4,294	Walwa	353	335	..	662	24	..	2	241	447	674	14	..	688	..	..	..	97·		
	..	..	1	1	875	245			54,689	Malseerus	456	419	..	852	23	..	..	554	321	644	178	53	875	..	..	..	78·3		
	..	..	1	1	725	789			104,100	Gudduck	375	350	..	656	59	..	10	216	509	712	10	3	725	..	..	..	98·6		
	..	..	1	1	1,032	1,597			35,278	Hooblee	538	494	2	874	153	..	3	193	839	982	34	1	1,032	..	..	..	96·6		
	..	..	1	1	668	1,830	Belg. Collec.		26,366	Belgaum	410	258	9	553	106	..	..	398	270	602	25	41	668	..	..	..	96·		
	..	..	1	..	227	..			16,254	Uthnee	107	120	..	171	37	..	19	69	158	207	15	5	227	..	..	..	93·2		
	..	..	1	..	26	..	N. Canara Col.		4,064	Sircy	14	12	..	18	8	..	..	5	21	19	..	7	26	..	..	..	100·		
Total.	..	..	63	54	64,282	54,000					34,557	29,725	348	57,382	3,797	..	2,755	17,837	46,409	61,170	1,730	1,362	64,282	..	..	..	97·1	..	1,020
Western. H. J. Blanc, M.D., Assistant Surgeon.	..	..	..	..	431	..	Tanna Collectorate.		67,930	Dhanoo	210	221	..	419	..	..	12	87	344	423	8	..	431	..	..	..	98·1		431
	..	..	1	..	1,200	..			51,465	Mahim	607	593	2	1,142	26	30	..	436	764	1,080	120	..	1,200	..	..	..	90·		1,200
	..	..	1	..	1,021	..			50,144	Bassein	526	495	289	718	14	..	..	473	548	1,006	15	..	1,021	..	..	..	98·5		1,021
	..	..	1	..	816	..			34,894	Shapoor	411	403	..	812	4	..	..	335	481	699	117	..	816	..	..	..	85·7		816
	..	..		..	2453	..			22,250	Warra	1,254	1,199	..	2,344	58	..	21	1,035	1,418	2,307	146	..	2,453	..	..	..	94·4		2,453
	..	..	..	..	449	..			41,835	Bhewndy	254	195	35	412	2	..	..	167	282	348	67	34	449	..	..	..	83·8		449
	..	..	..	..	..	..			54,328	Callian	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		..
	..	..	1	..	738	..			47,952	Moorbar	385	353	..	699	6	..	33	301	437	710	28	..	738	..	..	..	96·2		73
	..	..	1	..	2,439	..			63,512	Kurjut	1,300	1,139	..	2,384	29	..	26	940	1,499	2,331	108	..	2,439	..	..	..	95·6		2,439
	..	..	1	..	275	..			6,214	Town of Oorun	138	137	..	269	3	..	3	167	108	264	11	..	275	..	..	..	96·		275
	..	..	..	..	104	..			75,324	Panwell	48	56	..	104	..	..	..	84	20	69	35	..	104	..	..	..	66·3		104
	..	..	1	..	614	..			8,939	Town of Panwell	319	295	2	601	9	..	2	261	353	577	37	..	614	..	..	..	93·9		614
	..	..	1	..	270	..			10,561	Town of Tanna	175	104	40	219	15	2	3	91	188	255	24	..	270	..	..	..	91·4		270

1	2	3		4		5		6	7	8	9															10						11		12
											Primary Vaccinations.															Re-Vaccinations.						Percentage of Successful Cases, excluding those Unknown from the Total.		
											A.		B.					C.					D.	A.	B.	C.	D.							
											Sex.		Caste.					Age.		Results.				Results.			D.							
Circle.	Name and Rank of Superintendent.	1869-70.	1868.	1869-70.	1868.	1869-70.	1868.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.	Population of Area included in last column.	Name of portion of District or of Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under one year.	Above one year.	Successful.	Unsuccessful, including doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	In Primary Vaccination.	In Secondary Vaccination.	Average Number of Persons vaccinated by each Vaccinator.
Western—*continued.*	H. T. Blanc, M.D., Assistant Surgeon.	..	..	..	..	582	..	Colaba Collectorate.	56,373	Alibagh	328	254	..	572	5	..	5	264	318	564	18	..	582	..	..	..	..	96·9	..	252
		..	..	..	..	..	..		51,801	Penn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
		..	..	..	..	..	..		32,360	Roha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		..	..	1	..	2,685	..		58,264	Mangaum	1,364	1,321	..	1,998	224	..	463	524	2,161	2,637	48	..	2,685	..	..	..	..	98·2	..	2,685
		..	..	1	..	2,587	..		77,329	Mhar	1,273	1,314	..	2,187	162	..	238	249	2,338	2,585	2	..	2,587	..	..	..	..	99·9	..	2,587
		..	..	1	..	1,803	..	Rutnagherry Collectorate.	97,856	Malwan	936	867	2	1,724	..	..	77	391	1,412	1,803	..	..	1,803	..	..	..	..	100·	..	1,803
		..	..	1	..	4,395	..		74,899	Deoghur	2,319	2,076	..	4,095	87	..	213	822	3,573	4,378	67	..	4,395	..	..	..	..	98·4	..	4,395
		..	..	1	..	1,701	..		106,917	Rajapoor	960	741	..	1,569	..	..	132	205	1,496	1,624	77	..	1,701	..	..	..	..	95·5	..	1,701
		..	..	1	..	1,004	..		87,280	Rutnagherry	531	473	..	767	226	..	11	269	735	921	83	..	1,004	..	..	..	..	91·7	..	1,004
		..	..	1	..	1,457	..		74,246	Sungmeshwur	759	698	..	1,350	89	..	18	478	979	1,402	55	..	1,457	..	..	..	..	96·2	..	1,457
		..	..	1	..	4,599	..		104,674	Chiploon	2,386	2,213	..	3,475	532	..	592	525	4,074	4,538	61	..	4,599	..	..	..	..	98·6	..	4,599
		..	..	1	..	2,223	..		50,874	Gohaghur	1,220	1,003	..	1,673	448	..	102	523	1,700	2,201	22	..	2,223	..	..	..	..	99·	...	2,223
		..	..	1	..	3,217	..		105,318	Sooverndroog	1,702	1,515	..	2,598	307	..	312	749	2,468	3,176	41	..	3,217	..	..	..	..	98·7	..	3,217
		..	..	1	..	2,148	..	Native States.	8,000	Johar	1,136	1,012	..	1,247	..	..	1	629	1,519	2,025	123	..	2,148	..	..	..	..	94·2	..	2,148
		..	..	1	..	2,873	..		158,853	Sawunt Warree.	2,982	2,891	93	5,683	97	..	..	1,234	4,639	5,451	422	..	5,873	..	..	..	..	92·8	..	5,873
	Total.	..	..	20	18	45,284	..		1,644,868		23,523	21,570	463	39,961	2,373	32	2,264	11,239	33,854	43,324	1,735	34	45,093	..	..	..	..	96·1	..	2,254
Colaba, M.D.		..	..	1	1	1,373	2,705	Ahmedabad Collectorate. Sq. Miles 3,865.	236,782	Duscroe	782	591	..	1,169	42	..	162	1,018	355	1,331	20	22	1,373	..	..	..	..	98·5		
		..	..	1	1	2,839	2,818		49,468	Sanund	1,541	1,298	..	2,441	128	..	270	1,795	1,044	2,593	91	155	2,839	..	..	..	..	96·6		
		..	..	2	2	4,841	4,057		110,462	Veerungaum	2,645	2,196	..	4,351	160	..	330	3,495	1,346	4,293	269	279	4,841	..	..	..	..	93·7		
		..	..	2	2	4,121	4,402		102,488	Dholka	2,137	1,984	..	3,523	162	..	436	3,637	484	3,992	59	70	4,121	..	..	..	..	98·5		
		..	..	2	2	4,144	4,897		131,769	Dhundhooka	2,311	1,833	..	3,605	363	..	176	2,934	1,210	4,035	53	56	4,144	..	..	..	..	98·7		
		..	..	1	1	2,087	1,826		92,358	Prantej	1,089	1,048	..	1,908	89	..	90	1,867	220	1,996	79	12	2,087	..	..	..	..	96·1		
		..	..	1	1	1,744	1,488			Morassa	936	808	..	1,606	116	..	22	1,131	613	1,694	34	16	1,744	..	..	..	..	98·0		
		..	..	1	1	1,936	1,998		Not known.	Deesa Cantonment and surrounding villages	1,091	845	8	1,726	92	1	109	1,597	339	1,936	..	..	1,936	..	..	..	..	100·		

NORTHERN	MUNCHERJEE BYRAMJEE	..	..	1	1	2,218	2,286	Kaira Collectorate.	Sq. Miles 1,403.	71,714	Kuppurwunj	1,183	1,035	..	1,878	234	..	106	2,011	207	2,060	45	113	2,218	..	..	..	..	97·8
		..	..	1	1	3,040	3,002			122,445	Mehmoodabad .... Matur.....	1,604	1,346	..	2,528	315	..	197	1,707	1,333	2,706	57	277	3,040	..	..	..	..	97·9
		..	..	1	1	3,321	3,059			97,251	Neriad	1,897	1,424	..	2,645	379	..	297	2,690	631	2,963	154	204	3,321	..	..	..	..	95·0
		..	..	1	1	2,842	2,948				Mhoondah ..	1,524	1,318	..	2,160	403	..	279	2,526	316	2,628	77	137	2,842	..	..	..	..	97·1
		..	..	1	1	2,034	2,345			55,922	Thasra	1,087	947	...	1,549	268	..	217	1,459	575	2,008	13	13	2,034	..	..	..	..	99·3
		..	..	2	2	5,198	5,142			108,576	Anund	2,910	2,288	..	4,408	387	..	403	4,216	982	4,861	150	187	5,198	..	..	..	..	97·0
		..	..	1	1	4,743	3,537			90,293	Borsud	2,523	2,220	..	4,109	213	..	421	3,940	803	4,465	139	139	4,743	..	..	..	..	96·9
		..	..	1	1	2,158	2,639	Broach Collectorate.	Sq. Miles 1,196.	72,742	Jumboosur ..	1,234	924	..	1,945	206	..	7	576	1,582	2,094	40	24	2,158	..	..	..	..	98·1
		..	..	1	1	1656	2,017			31,174 / 35,578	A hmode .. / Wagra	869	787	..	1,371	206	..	79	1,359	297	1,403	100	153	1,656	..	..	..	..	93·3
		..	..	1	1	2,447	2,250			49,203	Broach	1,222	1,225	..	1,527	680	..	240	2,370	77	2,155	98	194	2,447	..	..	..	..	95·6
		..	..	1	1	1,854	1,968			57,305	Unklesur	935	919	..	1,450	189	24	191	1,436	418	1,733	85	36	1,854	..	..	..	..	95·3
		..	..	1	1	1,700	2,265	Surat Collectorate.	Sq. Miles 1,497.	28,144	Chowrasee ..	846	854	..	1,456	53	28	163	845	855	1,542	17	141	1,700	..	..	..	..	98·9
		..	..	1	1	1,653	1,889			70,531	Oolpar	864	789	..	1,549	66	6	32	375	1,278	1,487	95	71	1,653	..	..	..	..	93·5
		..	..	1	1	1,947	1,543			35,411	Mandvee	1,023	924	..	1,864	82	1	..	840	1,107	1,766	64	117	1,947	..	..	..	..	96·5
		..	..	1	1	1,669	1,954			61,311	Bardolee	879	790	..	1,532	44	3	90	419	1,250	1,549	87	33	1,669	..	..	..	..	94·6
		..	..	1	1	2,802	1,852			64,233	Soopa.....	1,463	1,339	..	2,447	128	..	227	1,232	1,570	2,506	91	205	2,802	..	..	..	..	96·4
		..	..	1	1	2,522	2,179			49,103	Chicklee	1,293	1,229	...	2,088	242	2	190	515	2,007	2,434	23	65	2,522	..	..	..	..	99·0
		..	..	1	1	1,663	2,552			71,972	Bulsar	852	811	..	1,506	31	3	123	221	1,442	1,449	93	121	1,663	..	..	..	..	93·9
		..	..	1	1	1,721	1,585			41,604	Bugwara	860	861	..	1,625	31	7	58	1,131	590	1,549	25	147	1,721	..	..	..	..	98·4
		..	..	1	1	..	..			....	.....	On office duty with Superintendent.																	
		..	..	1	1	3,233	3,299	Pahlunpoor State.	Square Miles 6,041.		Pahlunpoor ..	1,729	1,504	..	2,193	612	..	423	1,482	1,751	3,074	69	90	3,233	..	..	..	..	97·8
		..	..	1	1	268	746				Dhanera	144	124	..	254	3	..	11	174	94	201	67	..	268	..	..	..	..	75·
		..	..	1	1	1,057	1,918				Rhadunpoor..	552	475	..	895	153	..	9	483	574	934	41	82	1,057	..	..	..	..	95·7
		..	..	1	1	1,777	2,231				Wao ..... / Thurrad....	894	883	..	1,480	84	..	213	995	752	1,740	24	13	1,777	..	..	..	..	98·6
		..	..	1	1	2,149	1,240			304,493	Kakhrej .. / Deodur .... / Tehrwara ..	1,204	945	..	2,039	45	..	65	942	1,207	2,143	2	4	2,149	..	..	..	..	99·9
		..	..	1	1	1,079	2,678				Sooegaum / Morewara.. / Charchut .. / Santulpoor / Warye .... / Bhabhur ..	562	517	..	1,001	16	..	62	85	994	1,055	4	20	1,079	..	..	..	..	99·6
		..	..	1	1	2,672	1,861	Mahee Kanta State.	Square Miles 4,000.	27,157	Watruck Kanta ..	1,412	1,215	..	2,302	139	..	186	1,601	1,026	2,332	216	79	2,627	..	..	..	..	91·5
										27,743	Bavesee....																		
										17,887	Kuttosun ..																		
		..	..	1	1	2,411	1,801			5,711 / 58,939	Edur Town / Edur Talooka..	1,237	1,174	..	2,248	155	..	8	1,725	686	2,333	43	35	2,411	..	..	..	..	98·1
		..	..	2	2	3,173	3,588			3,169 / 102,379	Ahmudnuggur.. / Nahnee Marwar ..	1,649	1,524	..	2,823	189	..	161	1,709	1,464	2,699	210	264	3,173	..	..	..	..	92·7
		..	..	1	1	1,597	1,520			5,398 / 2,073 / 32,039 / 1,006 / 2,031	Daunta .... / Poseena.... / Sabur kanta / Sadra Camp / Sadra Town	894	703	..	1,338	87	..	172	751	846	1,180	189	228	1,597	..	..	..	..	86·1

2,039

1	2	3		4		5		6	7	8	9																10						11		12
											Primary Vaccinations.																Re-Vaccinations.						Percentage of Successful Cases, excluding those Doubtful from the Total.		
											A.		B.						C.						D.		A.	B.	C.	D.					
											Sex.		Caste.						Age.		Results.						Results.			D.					
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1869-70.	1868.	Number of Vaccinators. 1869-70.	1868.	Total Number of Persons vaccinated. 1869-70.	1868.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.	Population of Area included in last column.	Name of portion of District or of Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful, including doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	In Primary Vaccination.	In Secondary Vaccination.	Average Number of Persons vaccinated by each Vaccinator.
Northern—*continued.*	Muncherjee Byramjee Colah, M.D.	..	..	1	1	2,256	2,189	Cambay State...	79,019	Cambay.....	1,182	1,074	..	1,047	158	2	149	2,162	94	2,216	20	20	2,256	..	..	..	..	99·0		
		..	..	1	..	1,107	..	Dhurmpoor State	25,000	Dhurmpoor ..	525	582	..	1,054	10	3	40	121	986	1,057	29	21	1,107	..	..	..	..	97·3		
		..	..	1	1	1,451	1,020	Ahmedabad Collectorate.	20,933	Dholka	764	687	..	1,052	283	..	116	1,167	284	1,358	62	31	1,451	..	..	..	..	95·6		
		..	..	1	1	1,376	1,155		18,414	Veerungaum..	751	625	..	1,156	216	..	4	954	422	1,363	4	9	1,376	..	..	..	..	99·7		
		..	..	2	2	4,047	4,604		100,000	Ahmedabad..	2,018	2,029	22	3,172	833	19	1	2,795	1,252	3,881	126	40	4,047	..	..	..	..	96·8		
	Total.	..	..	49	49	99,881	101062		2,671,228		53,187	46,694	30	84,920	8,292	99	6,540	64,488	35,393	92,794	3,164	3,923	99,881	..	..	..	..	96·6	..	2,039
Sindh.	Assistant Surgeon.	..	..	..	..	..	..	Kurrachee Collectorate.	46,000	Dadoo.....	1,108	910	..	141	1,736	..	111	939	1,079	1,990	20	98	2,018	..	..	..	..	..		
		..	..	..	..	..	..		40,000	Sehwan	875	773	...	165	1,434	..	49	521	1,127	1,515	37	99	1,648	..	..	..	..	..		
		..	..	..	..	..	..		15,000	Manjhunda ..	543	377	..	214	658	..	48	488	432	840	14	63	920	..	..	..	..	..		
		..	..	..	..	..	..		16,000	Kotree	325	244	..	151	415	..	3	142	427	550	8	11	569	..	..	..	..	..		
											455	320	16	84	655	2	27	545	239	797	51	26	734	..	..	..	..	..		
		..	..	..	..	..	..		26,000	Tatta	536	463	..	87	894	..	18	212	787	999	26	64	999	..	..	..	..	..		
		..	..	..	..	..	..		10,000	Kurrachee....	856	729	..	33	1,527	..	25	218	1,367	1,474	..	111	1,585	..	..	..	..	..		
		..	..	..	..	..	..		14,000	Meerpoor Sacro	167	157	..	21	298	..	5	20	304	324	..	..	324	..	..	..	..	..		
		..	..	..	..	..	..		16,000	Ghorabari....	296	216	..	35	374	..	103	186	326	510	..	2	512	..	..	..	..	..		
		..	..	..	..	..	..		21,000	Shahbunder..	77	73	..	41	79	..	30	55	95	149	..	1	150	..	..	..	..	..		
		..	..	..	..	..	..		13,000	Jatee	13	13	..	3	20	..	3	7	19	26	..	..	26	..	..	..	..	..		
		..	..	..	..	..	..		24,000	Meerpoor Buttora.....	421	325	..	79	656	..	11	103	638	718	24	4	746	..	..	..	..	..		
		..	..	..	..	..	..	Collectorate.	56,000	Rohree	1,215	996	..	337	1,712	..	162	1,001	1,210	2,098	3	110	2,211	..	..	..	..	..		
		..	..	..	..	..	..		10,000	Syedpoor	714	627	..	171	1,057	..	113	661	680	1,289	22	30	1,341	..	..	..	..	..		
		..	..	..	..	..	..		34,000	Ghotekee	484	405	..	77	718	..	94	395	494	863	..	26	889	..	..	..	..	..		
		..	..	..	..	..	..		23,000	Meerpoor Matelo	716	471	..	79	997	..	120	473	714	1,148	1	38	1,187	..	..	..	..	..		
		..	..	..	..	..	..		30,000	Obaoro	980	716	..	180	1,359	..	157	565	1,131	1,649	5	42	1,696	..	..	..	..	..		
		..	..	..	..	..	..		32,000	Shikarpoor ..	259	235	..	34	458	..	2	203	288	483	..	11	494	..	..	..	..	..		
		..	..	..	..	..	..		30,000	Sukkur	664	546	..	293	879	..	38	654	556	1,210	..	..	1,210	..	..	..	..	..		
		..	..	..	..	..	..		35,000	Nowshero Alro	1,251	1,124	..	346	1,943	..	86	1,792	583	2,323	11	41	2,375	..	..	..	..	..		
		..	..	..	..	..	..		63,000	Larkhana	1,038	721	..	155	1,318	..	86	1,029	730	1,741	1	17	1,759	..	..	..	..	..		1,975

J. Williams, M.D.,	..	..	..	..	..	..	Shikarpoor	40,000	Kumbur	1,303	1,083	..	1,688	2,172	..	56	925	1,471	2,348	38	10	2,396	..	..	..	..	..							
	..	..	..	..	..	..		28,000	Nusseerabad	384	284	..	97	565	..	6	511	157	658	3	7	668	..	..	..	..	..							
	..	..	..	..	..	..		14,000	Labdaria	196	137	..	36	282	..	15	232	101	333	..	..	333	..	..	..	..	..							
	..	..	..	..	..	..		15,000	Tigr	1,046	869	..	229	1,609	..	77	863	1,052	1,896	5	14	1,915	..	..	..	..	..							
	..	..	..	..	..	..		30,000	Mehur	383	292	..	55	602	..	18	320	355	675	..	..	675	..	..	..	..	..							
	..	..	..	..	..	..		25,000	Kukkur	809	696	..	98	1,276	..	131	976	529	1,301	62	142	1,505	..	..	..	..	..							
	..	..	..	..	..	..	Jacobabad Districts	33,000	Jacobabad	803	602	..	111	1,349	1	34	881	614	1,499	7	79	1,495	..	..	..	..	..							
	..	..	..	..	..	..		25,000	Kusmore	377	306	..	23	646	..	14	282	401	638	2	43	683	..	..	..	..	..							
	..	..	..	..	..	..		27,000	Thul	1,158	959	2	289	1,823	..	33	1,105	1,042	2,135	6	6	2,147	..	..	..	..	..							
	..	..	..	..	..	..	Hydrabad Collectorate.	80,000	Hydrabad	599	503	..	146	860	..	99	440	662	1,035	4	63	1,102	..	..	..	..	..							
	..	..	..	..	..	..		45,000	Mahomed Khan's Tanda	1,825	1,395	..	234	2,815	..	171	596	2,624	3,140	22	58	3,220	..	..	..	..	..							
	..	..	..	..	..	..		35,000	Bagekatanda	687	527	..	111	1,038	..	65	277	937	1,139	27	48	1,214	..	..	..	..	..							
	..	..	..	..	..	..		42,000	Buddeen	1,290	1,086	..	262	1,855	..	169	610	1,676	2,186	20	80	2,286	..	..	..	..	..							
	..	..	..	..	..	..		20,000	Digri	832	757	..	158	1,145	..	256	836	753	1,558	20	11	1,589	..	..	..	..	..							
	..	..	..	..	..	..		46,000	AliyarjoTanda	438	357	..	141	602	..	52	313	482	795	..	..	795	..	..	..	..	..							
	..	..	..	..	..	..		40,000	Shadadpoor	1,564	1,102	..	433	2,167	..	66	934	1,732	2,663	1	2	2,666	..	..	..	..	..							
	..	..	..	..	..	..		40,000	Sukkrund	1,568	1,165	..	269	2,386	..	73	702	1,941	2,651	43	39	2,733	..	..	..	..	..							
	..	..	..	..	..	..		42,000	Mora	194	138	..	45	285	..	2	123	209	332	..	..	332	..	..	..	..	..							
	..	..	..	..	..	..		50,000	Nowshera Feroza	954	757	..	160	1,468	..	113	910	801	1,544	73	124	1,741	..	..	..	..	..							
	..	..	..	..	..	..	Thurr and Parkur.	33,000	Khandiaro	1,322	1,047	..	301	2,011	..	57	1,331	1,038	2,334	23	12	2,369	..	..	..	..	..							
	..	..	..	..	..	..		40,000	Oomerkote	758	604	2	137	952	..	271	255	1,107	1,307	22	33	1,362	..	..	..	..	..							
	..	..	..	..	..	..		21,000	Kippra	1,797	1,480	..	305	2,366	..	606	729	2,548	3,208	36	33	3,277	..	..	..	..	..							
	..	..	..	..	..	..		50,000	Nuggur Parkur	845	670	..	390	449	..	676	327	1,188	1,314	3	198	1,515	..	..	..	..	..							
	..	..	..	..	..	..		40,000	Dipla	267	216	..	19	390	..	74	34	449	448	5	30	483	..	..	..	..	..							
	..	..	..	..	..	..	Kheirpoor State.	110,000	Kheirpoor	802	458	..	167	872	..	221	353	907	1,235	..	25	1,260	..	..	..	..	..							
Total.	2	2	32	2	63,204	64,076		1,516,000		35,139	28,065	20	7,101	51,402	3	4,678	25,172	38,032	60,708	645	1,851	63,204	..	..	..	..	99·0	..	1,975					
Kattiawar.																																		
E. R. Butler, M.D., Surgeon.	..	..	1	1	In Superintendent's Office.																													
	..	..	1	1	1,918	1,501	Saiela	57,000	Saiela	1,017	901	..	1,757	118	..	43	424	1,494	1,833	19	66	1,918	..	..	..	..	99·6							
	..	..	..	..	..	..	Choora	....	Choora	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	1	1	1,759	1,226	Wankaneir	46,000	Wankaneir	968	791	..	1,303	298	..	158	1,320	430	1,720	30	9	1,759	..	..	..	..	98·2							
	..	..	1	1	1,812	1,629	Vithulgurh	42,000	Vithulgurh	967	845	..	1,619	107	..	86	790	1,022	1,736	44	32	1,812	..	..	..	..	97·4							
	..	..	..	..	..	..	Moolee	....	Moolee	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	..	..	..	..	Do.	....	Tulsana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	..	..	..	..	.....	....	Wurode	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	1	1	992	1,086	Bugusra	27,000	Bugusra	525	467	..	901	89	..	2	67	925	801	51	140	992	..	..	..	..	94·0							
	..	..	..	..	..	..	Kurreana	....	Kurreana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	1	1	1,123	1,017	Kotra	33,000	Kotra	630	493	..	934	161	..	28	564	559	1,052	54	17	1,123	..	..	..	..	95·3							
	..	..	..	..	..	..	Kherusra	....	Kherusra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	..	..	..	..	Lodeeka	....	Lodeeka	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	..	..	..	..	Mengnee	....	Mengnee	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	..	..	1	1	933	1,269	Dhurrolo	20,000	Dhurrole	503	430	..	764	141	..	23	271	662	856	35	42	933	..	..	..	..	96·0							
	..	..	1	1	1,503	1,329	Lathee	19,000	Lathee	820	683	..	1,358	109	..	36	611	892	1,428	64	11	1,503	..	..	..	..	95·							
	..	..	..	..	..	..	Oond Surveya	....	Chock	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..							
	1	..	..	1	707	1,404	Joonaghur	260,000	Joonaghur	397	310	..	568	139	..	..	352	355	669	16	22	707	..	..	..	..	97·6							
	..	..	1	1	1,209	1,230	Do.	....	Kootiana	678	531	..	824	385	..	..	534	675	1,164	31	14	1,209	..	..	..	..	98·2							
	..	..	1	1	438	917	Do.	....	Mangrole	222	216	..	326	99	..	13	206	232	429	8	1	438	..	..	..	..	98·1							
							8 Govt. Vaccinators in Jan. 1870 (omitted).			499	413	..	775	104	..	33	299	613	844	22	46	912	..	..	..	..	97·4							
	..	..	1	1	730	1,312	Do.	....	Oona	429	301	..	629	101	..	..	110	620	649	70	11	730	..	..	..	..	90·2							
	..	..	1	1	871	402	Do.	....	Puttun	485	386	..	699	172	..	..	150	721	860	2	9	871	..	..	..	..	99·7							
	..	..	1	1	1,069	260	Do.	....	Mallia	582	487	..	1,023	46	..	..	524	545	1,024	27	18	1,069	..	..	..	..	97·4							

KATTIAWAR—*continued.*

1	2	3		4		5		6	7	8	9																				10						11		12
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents.		Number of Vaccinators.		Total Number of Persons vaccinated.		Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.	Population of Area included in last column.	Name of portion of District or of Town.	PRIMARY VACCINATIONS.																		RE-VACCINATIONS.						Percentage of Successful Cases, excluding those Unknown from the Total.		Average Number of Persons vaccinated by each Vaccinator.
											A.		B.						C.						D.	A.	B.	C.	D.								
											SEX.		CASTE.						AGE.		RESULT.					RESULTS.											
		1869-70.	1868.	1869-70.	1868.	1869-70.	1868.				Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including Doubtful.	Unknown.	Total.	In Primary Vaccinations.	In Secondary Vaccinations.		
E. R. BUTLER, M.D., Surgeon.		1	1	..	..	1,252	1,326	Bhownuggur ..	200,000	Bhownuggur.	761	491	..	1,097	154	..	1	250	1,002	1,211	23	18	1,252	..	..	..	..	98·1			1,169
		..	..	1	1	985	1,513	Do. ..	....	Mowah	496	489	..	890	95	..	..	246	739	974	1	10	985	..	..	..	..	99·8			
		..	..	1	1	1,156	1,187	Do. ..	....	Koondla	610	546	..	1,116	40	..	..	237	919	1,114	22	20	1,156	..	..	..	..	97·9			
		..	..	1	1	788	1,062	Do. ..	....	Shehore.....	422	366	..	741	47	..	..	72	716	686	61	41	788	..	..	..	..	90·4			
		..	..	1	1	1,682	1,899	Do. ..	....	Botad	898	784	..	1,608	74	..	..	808	874	1,558	67	57	1,682	..	..	..	..	95·8			
		..	..	1	1	1,208	1,339	Do. ..	....	Tullaja	605	603	..	1,112	96	..	..	297	911	954	138	116	1,208	..	..	..	..	80·0			
		..	..	1	1	1,063	1,286	Do. ..	....	Nogunnuder .	532	531	..	1,016	47	..	..	210	853	922	81	60	1,063	..	..	..	..	91·9			
		..	..	1	1	438	209	Do. ..	....	Oomralla	210	228	..	417	21	..	..	64	374	414	13	11	438	..	..	..	..	96·9			
		..	..	1	..	1,164	..	Do. ..	....	Leelea	612	552	..	1,111	53	..	..	456	708	1,044	104	16	1,164	..	..	..	..	90·9			
		..	..	1	..	1,096	..	Do. ..	....	Mowah	587	509	..	1,053	43	..	..	170	926	812	136	148	1,096	..	..	..	..	95·7			
		..	..	1	..	720	..	Do. ..	....	Low Caste Vaccination.	360	360	..	..	1	..	719	414	306	684	20	16	720	..	..	..	..	97·1			
		..	..	1	1	1,739	1,373	Nowanuggur ..	160,000	Nowanuggur.	1,043	726	..	1,124	588	..	57	937	832	1,635	74	30	1,769	..	..	..	..	95·7			
		..	..	1	1	1,276	965	Do. ..	....	Hooriana	649	627	..	927	286	..	63	450	826	1,127	92	57	1,276	..	..	..	..	92·3			
		..	..	1	1	1,260	870	Do. ..	....	Kundorna....	684	576	..	1,088	172	..	..	359	901	1,211	15	34	1,260	..	..	..	..	98·6			
		..	..	1	1	1,073	342	Do. ..	....	Jodhpur	555	518	..	985	84	..	4	359	714	984	38	51	1,073	..	..	..	..	96·2			
		..	..	1	1	1,259	1,299	Goondul	80,000	Goondul	633	626	..	1,030	173	..	56	647	612	1,164	49	46	1,259	..	..	..	..	95·9			
		..	..	1	1	350	451	Do.	....	Oopleta	162	188	..	291	49	..	10	103	247	336	10	4	350	..	..	..	..	97·2			
		..	..	1	1	1,201	872	Do.	....	Dhorajee	655	546	..	771	361	..	69	904	297	1,108	33	60	1,201	..	..	..	..	97·1			
		..	..	1	1	1,788	1,092	Morevee	60,000	Morevee	1,049	739	..	1,566	222	..	..	649	1,139	1,737	34	17	1,788	..	..	..	..	99·9			
		..	..	1	1	1,823	1,734	Limree	60,000	Limree	988	835	..	1,479	273	..	71	995	828	1,774	39	10	1,823	..	..	..	..	97·8			
		..	..	1	1	1,335	1,464	Jaithpoor	77,560	Jaitpoor.....	728	607	..	850	396	..	89	683	652	1,213	74	48	1,335	..	..	..	..	94·0			
		..	..	1	1	1,518	1,520	Wullah	16,000	Wullah	806	712	..	1,402	81	..	35	156	1,362	1,479	33	6	1,518	..	..	..	..	97·8			
		..	..	1	1	835	1,278	Dussara.....	38,100	Dussara.....	443	392	..	697	136	..	2	318	517	810	15	10	835	..	..	..	..	98·1			
		..	..	..	..	..	..	Bujjana	....	Bujjana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
		..	..	..	..	..	..	Jeenjoovara....	....	Jeenjoovara..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
		..	..	..	..	..	..	Wunodi.....	....	Wunode.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
		..	..	1	1	1,305	1,325	Drangdra	60,000	Drangdra	691	614	..	1,266	39	..	..	615	690	1,251	45	9	1,305	..	..	..	..	96·3			
		..	..	1	1	1,358	1,459	Luktur	28,000	Luktur	693	665	..	1,291	52	..	15	340	1,018	1,252	24	82	1,358	..	..	..	..	98·2			
		..	..	..	..	..	..	Wudwan Byat..	....	Wuna.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
		..	..	1	1	1,305	1,450	Bantwa	48,400	Bantwa	669	636	..	686	505	..	114	793	513	1,240	35	30	1,305	..	..	..	..	97·4			
		..	..	1	1	1,195	1,568	Wudwan	48,000	Wudwan	646	549	..	1,149	21	..	25	437	758	917	129	149	1,195	..	..	..	..	87·6			
		..	..	1	1	1,005	1,157	Deedan	11,200	Deedan	502	503	..	857	148	..	..	235	770	958	20	27	1,005	..	..	..	..	97·8			
		..	..	..	..	..	..	Jaffrabad	....	Jafferabad ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
		..	..	..	..	..	..	Joonaghur	....	Nogshree	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
		..	..	1	1	1,574	1,572	Rajkote.....	26,000	Surdhar	801	773	..	1,322	148	..	104	621	953	1,493	10	71	1,574	..	..	..	..	99·3			
		..	..	1	1	1,410	447	Jhusdun	43,208	Jhusdun	758	652	..	1,234	137	..	39	661	749	1,234	64	112	1,410	..	..	..	..	95·0			
		..	..	..	..	..	..	Kotra.....	....	Kotra.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			

	..	..	..	..	..	..	Babra.....	....	Babra.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
	..	..	1	1	1,231	678	Pallytana	50,000	Pallytana	693	533	..	1,195	36	..	..	365	866	1,201	12	18	1,231	..	..	..	..	99·0		
	..	..	1	1	1,351	1,327	Porebunder	60,000	Porebunder ..	672	679	..	1,220	125	..	6	343	1,008	1,249	46	56	1,351	..	..	..	..	95·6		
	..	..	1	..	230	..	Mallia	12,000	Mallia.....	135	95	..	158	72	..	..	7	223	164	38	28	230	..	..	..	..	82·1		
Total.	2	1	45	42	..	..	.....	1,582,468	.....	29,475	25,504	..	46,229	6,844	..	1,906	20,423	34,556	51,005	2,068	1,906	54,979	..	..	..	..	96·1	..	1,169
Rewa Kanta. J. T. Welsh, M.D., Assistant Surgeon.	..	..	1	1	2,370	2,004	Panch Mahals..	51,427	Godra.....	1,191	1,179	..	2,055	237	..	78	1,201	1,169	2,334	36	..	2,370	..	..	..	..	98·4		
	..	..	1	1	2,361	1,743	Do.	42,673	Dohud	1,154	1,207	..	2,221	111	..	29	1,000	1,361	2,245	63	63	2,361	..	..	..	..	97·2		
	..	..	1	1	1,721	1,457	Do.	29,000	Kalole.....	864	857	..	1,616	51	..	54	992	729	1,578	99	44	1,721	..	..	..	..	94·0		
	..	..	1	1	1,674	1,124	Do.	23,111	Halole	846	828	..	1,573	34	..	67	411	1,263	1,664	7	3	1,674	..	..	..	..	99·5		
	..	..	1	1	1,356	1,179	Do.	22,527	Jhalode	649	701	..	1,313	34	..	3	376	974	1,154	99	97	1,350	..	..	..	..	92·0		
	..	..	2	2	3,068	3,521	Native States.	Not known.	Rajpeepla	1,518	1,550	..	2,846	101	..	121	1,251	1,817	3,029	9	30	3,068	..	..	..	..	99·7		1,309
	..	..	2	½	2,073	622			Loonawarra..	1,074	999	..	1,969	89	..	15	570	1,503	1,972	60	41	2,073	..	..	..	..	97·0		
	..	..	1	½	434	400			Ballasinore ..	221	213	..	349	82	..	3	146	288	416	12	6	434	..	..	..	..	97·1		
	..	..	2	1	2,098	1,066			Barrea	1,055	1,043	..	2,083	4	3	8	265	1,833	1,855	111	132	2,098	..	..	..	..	94·3		
	..	..	1	1	706	484			Chota Oodeypoor	400	306	..	701	..	..	5	389	317	485	90	131	706	..	..	..	..	84·3		
	..	..	1	1	1,136	619			Soonth and Kuddana ..	568	568	..	1,113	19	..	4	67	1,069	978	65	93	1,136	..	..	..	..	93·7		
	..	..	1	1	651	371			Sunkeira Mewal	330	321	..	615	36	..	..	159	492	457	139	55	651	..	..	..	..	76·6		
Total.	..	..	15	12	19,642	14,630	....	....	.....	9,870	9,772	..	18,454	798	3	387	6,827	12,815	18,167	790	685	19,642	..	..	..	..	95·8	..	1,309
Presidency. Anunta Chandroba, Sub-Assist. Surgeon.	..	..	6	6	9,222	10,757	Bombay Island.	816,562	Bombay City.	5,192	4,030	805	6,104	1,336	883	144	3,528	5,694	6,002	1,141	2,079	9,222	..	..	..	..	84·0	..	1,537
Total.	4	3	275	258	424,774	393,865				226,376	198,398	1,737	319,959	78,353	976	23,719	175,596	249,178	397,622	13,175	13,977	424,774					96·7		

A.—VACCINE DEPARTMENT.

STATEMENT No. II.—Showing the Monthly Number and Results of the Vaccinations performed in each Circle of Superintendence in the Bombay Presidency for the Year 1869-70.

1	2	3	4	5			6	7
Circle of Superintendence.	Months.	District in which operations chiefly conducted in each month.	Total Number vaccinated.	Results.			Total.	Average percentage Successful, excluding those Doubtful.
				Successful.	Unsuccessful and Doubtful.	Unknown.		
Central Circle.	April 1869.....	Whole Circle.....	5,463	5,162	177	124	5,463	96·6
	May "	Do.	6,740	6,334	201	205	6,740	96·9
	June "	Do.	6,011	5,655	167	189	6,011	97·1
	July "	Do.	5,620	5,308	161	151	5,620	97·0
	August "	Do.	4,974	4,677	121	176	4,974	97·5
	September "	Do.	5,286	4,958	134	194	5,286	97·4
	October "	Do.	5,707	5,363	113	231	5,707	97·9
	November "	Do.	5,872	5,494	198	180	5,872	96·5
	December "	Do.	6,365	6,078	130	157	6,365	97·9
	January 1870.....	Do.	5,829	5,527	153	149	5,829	97·3
	February "	Do.	5,249	4,855	167	227	5,249	96·6
	March "	Do.	5,355	5,085	141	129	5,355	97·3
		Total.....	68,471	64,496	1,863	2,112	68,471	97·1
Southern Circle.	April 1869.....	Whole Circle.....	6,346	6,115	166	65	6,346	97·3
	May "	Do.	4,992	4,779	111	102	4,992	97·7
	June "	Do.	4,557	4,329	107	121	4,557	97·7
	July "	Do.	3,907	3,705	119	83	3,907	96·6
	August "	Do.	4,186	3,955	138	93	4,186	96·6
	September "	Do.	4,551	4,279	172	100	4,551	96·1
	October "	Do.	5,046	4,819	126	101	5,046	97·5
	November "	Do.	5,458	5,167	172	119	5,458	96·8
	December "	Do.	5,593	5,287	159	147	5,593	97·0
	January 1870.....	Do.	6,698	6,369	167	162	6,698	97·4
	February "	Do.	6,336	6,031	176	129	6,336	97·1
	March "	Do.	6,523	6,247	136	140	6,523	97·2
		Total.....	64,282	61,170	1,750	1,362	64,282	96·8
Western Circle.	April 1869.....	Whole Circle.....	4,348	4,169	85	94	4,348	97·9
	May "	Do.	4,359	4,188	102	69	4,359	97·6
	June "	Do.	4,569	4,429	88	52	4,569	98·5
	July "	Do.	4,378	4,215	93	70	4,378	97·8
	August "	Do.	3,763	3,639	76	48	3,763	97·9
	September "	Do.	4,157	3,986	117	54	4,157	97·1
	October "	Do.	4,252	4,110	90	52	4,252	97·8
	November "	Do.	3,560	3,459	62	39	3,560	98·2
	December "	Do.	3,023	2,880	57	86	3,023	98·0
	January 1870.....	Do.	2,453	2,329	56	68	2,453	98·0
	February "	Do.	3,048	2,925	66	57	3,048	98·1
	March "	Do.	3,183	2,995	55	133	3,183	98·2
		Total.....	45,093	43,324	947	822	45,093	97·8

1	2	3	4	5			6	7
Circle of Superintendence.	Months.	District in which operations chiefly conducted in each month.	Total Number vaccinated.	Results.			Total.	Average percentage successful, excluding those Doubtful.
				Successful.	Unsuccessful and Doubtful.	Unknown.		
Northern Circle.	April 1869.....	Whole Circle.....	10,529	9,828	270	431	10,529	97·3
	May „	Do.	8,824	8,230	316	278	8,824	96·3
	June „	Do.	8,803	8,130	337	336	8,803	96·0
	July „	Do.	8,133	7,510	343	280	8,133	95·5
	August „	Do.	7,405	6,824	334	247	7,405	95·3
	September „	Do.	6,776	6,142	319	315	6,776	95·3
	October „	Do.	5,925	5,367	204	354	5,925	96·3
	November „	Do.	5,920	5,437	167	316	5,920	98·8
	December „	Do.	7,959	7,441	175	343	7,959	97·7
	January 1870.....	Do.	8,451	7,953	180	318	8,451	97·7
	February „	Do.	7,903	7,410	200	293	7,903	97·3
	March „	Do.	9,206	8,609	213	384	9,206	97·6
	2 Municipal Vaccinators in Ahmedabad, 1869-70.	Do.	4,047	3,881	126	40	4,047	96·8
		Total.....	99,881	92,794	3,164	3,923	99,881	96·6
Sind Circle.	April 1869.....	Whole Circle.....	4,978	4,836	30	114	4,978	99·6
	May „	Do.	5,790	5,616	36	136	5,790	99·2
	June „	Do.	4,497	4,355	59	83	4,497	98·6
	July „	Do.	4,730	4,528	42	160	4,730	99·0
	August „	Do.	5,246	5,049	56	141	5,246	98·9
	September „	Do.	4,546	4,288	41	217	4,546	99·0
	October „	Do.	4,236	4,045	71	120	4,236	98·2
	November „	Do.	4,781	4,538	47	196	4,781	98·5
	December „	Do.	5,454	5,303	46	105	5,454	99·1
	January 1870.....	Do.	5,627	5,459	27	141	5,627	99·5
	February „	Do.	5,975	5,704	81	190	5,975	98·5
	March „	Do.	6,560	6,280	38	222	6,560	98·9
	1 Municipal Vaccinator in Kotree, 1869-70.	Do.	784	707	51	26	784	93·2
		Total.....	63,204	60,708	645	1,851	63,204	98·9
Kattiawar Circle.	April 1869.....	Whole Circle.....	4,677	4,325	178	174	4,677	96·4
	May „	Do.	4,586	4,234	196	156	4,586	95·8
	June „	Do.	4,852	4,472	214	166	4,852	95·4
	July „	Do.	5,172	4,754	229	189	5,172	95·4
	August „	Do.	4,469	4,104	205	160	4,469	95·2
	September „	Do.	4,304	3,950	191	163	4,304	95·3
	October „	Do.	3,850	3,527	162	161	3,850	95·3
	November „	Do.	3,776	3,533	122	121	3,776	96·6
	December „	Do.	5,293	4,994	146	153	5,293	97·1
	January 1870.....	Do.	5,151	4,822	151	178	5,151	96·9
	February „	Do.	4,369	4,093	142	134	4,369	96·6
	March „	Do.	4,480	4,197	132	151	4,480	96·9
		Total	54,979	51,005	2,068	1,906	54,979	96·1

1	2	3	4	5			6	7
Circle of Superintendence.	Months.	District in which operations chiefly conducted in each month.	Total Number vaccinated.	Results.			Total.	Average percentage Successful, excluding those Doubtful.
				Successful.	Unsuccessful and Doubtful.	Unknown.		
Rewa Kanta Circle.	April 1869.....	Whole Circle.....	1,457	1,362	50	45	1,457	96·4
	May „	Do.	1,615	1,464	91	60	1,615	94·1
	June „	Do.	1,655	1,529	71	55	1,655	95·5
	July „	Do.	1,350	1,226	60	64	1,350	95·3
	August „	Do.	1,287	1,133	64	90	1,287	94·6
	September „	Do.	1,494	1,377	62	55	1,494	95·6
	October „	Do.	1,233	1,081	96	56	1,233	91·8
	November „	Do.	1,936	1,832	64	40	1,936	96·6
	December „	Do.	1,966	1,872	61	33	1,966	96·8
	January 1870.....	Do.	1,653	1,565	50	38	1,653	96·9
	February „	Do.	2,041	1,896	60	85	2,041	96·9
	March „	Do.	1,955	1,830	61	64	1,955	96·7
		Total	19,642	18,167	790	685	19,642	95·8
Presidency Circle.	April 1869.....	Whole Circle.....	1,032	708	123	201	1,032	83·9
	May „	Do.	661	453	93	115	661	82·9
	June „	Do.	595	356	112	127	595	76·0
	July „	Do.	579	388	83	108	579	82·3
	August „	Do.	535	350	67	118	535	83·9
	September „	Do.	665	416	73	176	665	85·0
	October „	Do.	665	424	77	164	665	84·6
	November „	Do.	779	496	86	197	779	84·6
	December „	Do.	729	455	86	189	729	83·5
	January 1870.....	Do.	775	484	84	207	775	85·0
	February „	Do.	972	622	139	211	972	81·7
	March „	Do.	1,235	851	118	266	1,235	87·9
		Total	9,222	6,002	1,141	2,079	9,222	84·0
		Grand Total.....	424,774	397,622	13,175	13,977	424,774	96·7

Note.—Column No. 4 is unnecessary, because the total is shown in column No 6. It would be well for this table to show primary distinct from re-vaccinations.

A.—VACCINE DEPARTMENT.

STATEMENT No. III.—Showing Expenditure of Vaccine Department in each Circle of Superintendence in the Bombay Presidency for the Year 1869-70.

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.
A.—Paid by Government.	Rs. a. p.	Rs. a. p.			Rs. a. p.
Superintendent General.					
Salary at Rs. 1,150* per mensem ...	13,800 0 0	13,487 0 0			
Office establishment, at Rs. 104 do....	1,248 0 0	1,248 0 0			
Travelling expenses	2,400 0 0	2,120 0 0			
Contingencies.....	1,320 0 0	1,071 0 0			
Total...	18,768 0 0	17,926 0 0			
Central Circle.					
Supts. salary, at Rs. 368 per mensem ...	6,600 0 0	4,419 12 0			
Native Supts., at Rs. each do. ...	.....	.....			
1 Head Vaccinator, at Rs. 30 do. ...	6,180 0 0	359 0 0			
2 Vaccinators, at Rs. 24 each do. ...		575 0 0			
18 Asst. Vaccinators, at Rs. 18 do. ...		3,868 8 0			
8 Apprentice do. at Rs. 14 do. ...		1,316 7 0			
29 Vaccinators' Peons, at Rs. 7 do. ...	2,304 0 0	2,349 0 0			
Office establishment, at Rs. 30 do. ...	.....	342 0 0			
Travelling allowances	2,920 0 0	1,439 0 0			
Contingencies.....	1,132 0 0	455 8 0			
Total.....	19,136 0 0	15,124 3 0	55,959	98·0	0 4 6
Southern Circle.					
Supt's. salary, at Rs. 450 per mensem...	5,400 0 0	5,319 0 0			
Native Supts., at Rs. each do. ...	.....	.....			
1 Head Vaccinator, at Rs. 30 do. ...	360 0 0	360 0 0			
2 Vaccinators, at Rs. 24 each do. ...	576 0 0	572 0 0			
12 Asst. do. at Rs. 18 do. do. ...	2,592 0 0	2,534 12 9			
7 App. do. at Rs. 14 do. do. ...	1,176 0 0	1,158 2 0			
22 Vactrs'. Peons, at Rs. 7 do. do. ...	1,848 0 0	1,556 4 5			
Office establishment, at Rs. 30 do. ...	360 0 0	347 11 2			
Travelling allowances	1,944 0 0	1,501 0 0			
Contingencies.....	709 0 0	428 4 11			
Total.....	14,965 0 0	13,777 3 3	28,499	97·1	0 8 1
Western Circle.					
Supts. salary, at { Rs. 368 / „ 600 } per mensem.	4,419 0 0	4,973 0 0			
Native Supts., at Rs. each do. ...	.....	.....			
1 Head Vaccinator, at Rs. 30 do. ...	360 0 0	340 0 0			
2 Vaccinators, at Rs. 24 each do. ...	576 0 0	538 0 0			
8 Asst. do. at Rs. 18 do. do. ...	1,728 0 0	1,687 0 0			
4 Apprentice do. at Rs. 14 do. do. ...	672 0 0	613 0 0			
14 Vaccinators' Peons, at Rs. 7 do. do. ...	1,260 0 0	1,193 0 0			
Office establishment, at Rs. 30 do. ...	360 0 0	344 0 0			
Travelling allowances	2,440 0 0	1,586 0 0			
Contingencies	713 0 0	356 0 0			
Total.....	12,528 0 0	11,630 0 0	35,904	96·7	0 5 4

* This ncludes Rs. 100 for Presidency house-rent.

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.
A.—PAID BY GOVERNMENT—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
NORTHERN CIRCLE.					
Supt's. salary, at Rs. 450 per mensem...	5,400 0 0	4,200 0 0			
Native Supts., at Rs. each do. ...	.....	.....			
1 Head Vaccinator, at Rs. 30 do. ...	360 0 0	360 0 0			
2 Vaccinators, at Rs. 24 each do. ...	576 0 0	576 0 0			
19 Asst. Vaccinators, at Rs. 18 do. do. ...	4,104 0 0	3,937 0 0			
10 Apprentice do., at Rs. 14 do. do. ...	1,680 0 0	1,632 0 0			
32 Vaccinators' Peons, at Rs. 7 do. do. ...	2,688 0 0	2,408 0 0			
Office establishment, at Rs. 30 do. ...	360 0 0	269 0 0			
Travelling allowances	2,920 0 0	1,589 0 0			
Contingencies.....	630 0 0	463 0 0			
Total.....	18,718 0 0	15,434 0 0	70,273	96·9	0 3 9
SINDH CIRCLE.					
Supt's. salary, at Rs. 600 per mensem...	7,200 0 0	4,943 8 7			
Native Supts., at Rs. each do. ...	.....	.....			
1 Head Vaccinator, at Rs. 30 do. ...	360 0 0	360 0 0			
2 Vaccinators, at Rs. 24 each do. ...	576 0 0	573 9 7			
9 Asst. Vaccinators, at Rs. 18 do. do. ...	1,944 0 0	1,923 2 1			
5 Apprentice do., at Rs. 14 do. do. ...	840 0 0	816 0 0			
17 Vaccinators' Peons, at Rs. 7 do. do. ...	1,428 0 0	1,427 8 10			
Office establishment, at Rs. 30 do. ...	360 0 0	355 15 8			
Travelling allowances*	4,175 0 0	2,656 13 0			
Contingencies.....	911 0 0	578 14 0			
Total.....	17,794 0 0	13,635 7 9	38,179	99·0	0 5 11
KATTIAWAR CIRCLE.					
Supt's. salary, at Rs. 100 per mensem...	1,200 0 0	1,200 0 0			
Native Supts., at Rs. each do. ...	.....	.....			
Head Vaccinator, at Rs. do. ...	.....	.....			
1 Vaccinator, at Rs. 24 do. ...	288 0 0	288 0 0			
5 Asst. do. at Rs. 18 do. do. ...	1,080 0 0	1,080 0 0			
2 Apprentice do., at Rs. 14 do. do. ...	366 0 0	336 0 0			
Vaccinator's Peon, at Rs. do. ...	.....	.....			
Office establishment, at Rs. 12 do. ...	144 0 0	140 0 0			
Travelling allowances	1,440 0 0	880 0 0			
Contingencies.....	196 0 0	398 0 0			
Total.....	4,684 0 0	4,322 0 0	10,040	96·8	0 7 4
REWA KANTA CIRCLE.					
Supt's. salary, at Rs. per mensem...	.....	.....			
Native Supts., at Rs. each do. ...	.....	.....			
Head Vaccinator, at Rs. do. ...	.....	.....			
1 Vaccinator, at Rs. 24 do. ...	288 0 0	288 0 0			
2 Asst. do., at Rs. 18 do. do. ...	432 0 0	431 0 0			
2 Apprentice do., at Rs. 14 do. ...	336 0 0	330 0 0			
5 Vaccinators' Peons, at Rs. 7 do. ...	420 0 0	420 0 0			
Office establishment, at Rs. 12 do. ...	144 0 0	182 0 0			
Travelling allowances	600 0 0	485 0 0			
Contingencies.....	137 0 0	84 0 0			
Total.....	2,357 0 0	2,220 0 0	9,476	96·7	0 3 11

* This includes travelling allowance of 3 annas per diem to Vaccinators on duty in the Districts.

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.
A.—Paid by Government—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Presidency Circle.					
Supt's. salary, at Rs. 350 per mensem...	4,200 0 0	4,200 0 0			
Native Supts., at Rs. each do. ...	.....	.....			
1 Head Vaccinator, at Rs. 30 do. ...	360 0 0	360 0 0			
2 Vaccinators, at Rs. 24 each do. ...	576 0 0	524 0 0			
2 Asst. do., at Rs. 18 do. do. ...	432 0 0	432 0 0			
1 Apprentice do., at Rs. 14 do. ...	168 0 0	168 0 0			
Vaccinators' Peons, at Rs. do. ...	.....	.....			
Office establishment, at Rs. 33	396 0 0	396 0 0			
Conveyance allowance	540 0 0	540 0 0			
Contingencies	130 0 0	110 0 0			
Total.....	6,802 0 0	6,730 0 0	9,222	84·0	1 1 11
Total paid by Government.....	1,15,752 0 0	1,00,798 0 0	2,57,552	97·2	0 6 8
B.—Paid by Municipalities.					
Central Circle.					
1 Vaccinator at Ahmednuggur, at Rs. 10 per mensem.	120 0 0	120 0 0	930	95·4	0 3 7
1 Vaccinator's Peon do., at Rs. 6 do. ...	72 0 0	72 0 0			
2 Do. at Poona, at Rs. 18½ each do.	444 0 0	444 0 0	1,651	95·8	0 6 9
2 Do. Peons at Poona, at Rs. 6 each do.	144 0 0	144 0 0			
1 Do. at Indapoor, at Rs. * do.	.....	.....	231	86·6	.....
1 Do. at Joonere, at Rs. 7 do.	7 0 0	7 0 0	18	100·	0 6 2
1 Do. at Nassick, at {Rs. 12 / Rs. 15} do.	153 0 0	153 0 0	564	82·6	0 8 8
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
1 Do. at Sholapoor, at Rs. 15 do.	180 0 0	180 0 0	653	99·1	0 5 4
1 Do. Peon do. at Rs. 5 do.	60 0 0	50 0 0			
1 Do. at Barsee, at Rs. 15 do.	180 0 0	180 0 0	661	98·2	0 6 10
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Do. Contingencies do.	6 0 0	6 0 0			
1 Do. at Sangola, at Rs. 15 do.	180 0 0	150 0 0	792	91·6	0 5 3
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Do. Contingencies	12 0 0	10 0 0			
1 Do. at Punderpoor, at Rs. 15 do.	180 0 0	180 0 0	537	84·9	0 10 6
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
1 Do. at Beejapoor, at Rs. 10 do.	120 0 0	119 8 0	334	97·8	0 9 6
1 Do. Peon do. at Rs. 5 do.	60 0 0	60 0 0			
Do. Contingencies	12 0 0	12 0 0			
1 Do. at Bagulkote, at Rs. 12 do.	144 0 0	144 0 0	568	93·6	0 4 10
Do. Contingencies	12 0 0	12 0 0			
1 Do. at Kulludghee, at Rs. 10 do.	120 0 0	120 0 0	637	100·	0 3 2
Do. Contingencies	6 0 0	6 0 0			
1 Do. at Barramuttee, at Rs. 12 do.	144 0 0	144 0 0	417	96·	0 9 5
1 Do. Peon do. at Rs. 6 do.	72 0 0	70 8 0			
Do. Contingencies	12 0 0	12 0 0			
Total.....	2,728 0 0	2,654 0 0	7,975	94·4	0 6 1

* No special pay for vaccinating, but is paid for the charge of the Dispensary.

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.
B.—Paid by Municipalities—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Southern Circle.					
1 Vaccinator at Khatow, at Rs. 15 per mensem.	180 0 0	178 0 0	870	97·4	0 5 2
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Malseerus, at Rs. 15 do.	180 0 0	165 0 0	875	78·3	0 6 3
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Moan, at Rs. 15 do.	180 0 0	180 0 0	1,124	95·8	0 4 2
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Khanapoor, at Rs. 15 do.	180 0 0	180 0 0	972	95·0	0 4 8
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Kurrar, at Rs. 15 do.	180 0 0	165 0 0	1,087	100·	0 3 9
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Koregaum, at Rs. 15 do.	180 0 0	180 0 0	1,074	92·2	0 4 6
1 Do. Peon at do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Walwa, at Rs. 15 do.	180 0 0	180 0 0	688	97·0	0 6 4
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Belgaum, at Rs. 10 do.	120 0 0	120 0 0	668	96·0	0 3 2
Do. Peon and Contingencies	.....	.....	.....	.....	.....
1 Vaccinator at Uthnee, at Rs. 15 for 8 months.	120 0 0	120 0 0	227	93·2	0 9 3
Do. Peon and Contingencies	.....	.....	.....	.....	.....
1 Vaccinator at Hooblee, at Rs. 10 per mensem.	120 0 0	120 0 0	1,032	96·6	0 1 11
Do. Peon and Contingencies	.....	.....	.....	.....	.....
1 Vaccinator at Gudduck, at Rs. 15 do. for 9 months.	135 0 0	135 0 0	725	98·6	0 3 0
Do. Peon and Contingencies	.....	.....	.....	.....	.....
1 Vaccinator at Sircy, at Rs. 10 do. for 2 months.	10 0 0	10 0 0	26	100·	0 8 5
Do. Peon and Contingencies	.....	.....	.....	.....	.....
Total.....	2,395 0 0	2,363 0 0	9,368	94·8	0 4 4
Western Circle.					
1 Vaccinator at Tanna, at Rs. 16 per mensem.	192 0 0	192 0 0	279	91·4	0 12 5
Do. Contingencies	6 0 0	6 0 0			
1 Vaccinator at Oorun, at Rs. 15 do.	180 0 0	157 0 0	275	96·	0 7 3
1 Do at Panwell, at Rs. 15 do.	180 0 0	180 0 0	614	93·9	0 5 0
Total.....	558 0 0	535 0 0	1,168	92·2	0 7 10

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.
B.—Paid by Municipalities—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Northern Circle. 1 Vaccinator at Dholka, at Rs. 12 per mensem.	144 0 0	138 0 0	1,451	97·6	0 2 5
Do. Peon at do. at Rs. 6 do.	72 0 0	72 0 0			
Vaccinator's Contingencies	3 0 0	3 0 0			
1 Vaccinator at Veerungaum, at Rs. 12.	144 0 0	132 0 0	1,373	97·6	
1 Do. Peon do. at Rs. 6	72 0 0	72 0 0			
Vaccinator's Contingencies	3 0 0	3 0 0			
2 Vaccinators and Peons at Ahmedabad.	464 0 0	464 0 0	4,047	96·8	0 1 1
Total.....	902 0 0	884 0 0	6,874	97·0	0 2 2
Sind Circle. 1 Vaccinator at Kotree, and Contingencies..... Total.....	268 0 0	258 0 0	784	93·2	0 5 10
Total paid by Municipalities.....	6,851 0 0	6,694 0 0	26,169	95·2	0 5 3
C.—Paid by Local Funds.					
Central Circle. 3 Vaccinators in Poona Collectorate, at Rs. 13 each per mensem...	468 0 0	319 0 0	1,902	85·4	0 4 11
3 Do. Peons do. Rs. 6 do. ...	216 0 0	138 0 0			
Contingencies	36 0 0	23 0 0			
Total.....	720 0 0	480 0 0	1,902	85·4	0 4 11
Southern Circle. 3 Vaccinators in Dharwar Collectorate, at Rs. 15 each per mensem.	315 0 0	300 0 0	1,840	97·3	0 3 11
3 Do. do. at Rs. 14 do. do.	294 0 0	294 0 0	2,003		
6 Do. Peons do. at Rs. 7 do. do.	294 0 0	294 0 0	.....		
Contingencies do.	72 0 0	.....	.....		
Total.....	975 0 0	888 0 0	3,843	97·3	0 3 11
Sind Circle. 2 Native Assistant Superintendents ...	6,084 0 0	5,976 4 0	22,981	99·1	0 4 4
7 Vaccinators, at Rs. 15 each per mensem					
6 ditto at Rs. 12 do. do. ...					
14 Peons { 13 at Rs. 6 do. / 1 at Rs. 8 do. }					
Contingencies, &c. at Rs. 13 do. ...					
Total.....	6,084 0 0	5,976 4 0	22,981	99·1	0 4 4
Total paid by Local Funds.....	7,779 0 0	7,344 4 0	28,726	97·6	0 4 2

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.
D.—Paid by Native Chiefs or Landlords.	Rs. a. p.	Rs. a. p.			Rs. a. p.
Central Circle.					
1 Vaccinator by Aukulkote State, at Rs. 15 per mensem.	180 0 0	180 0 0	1,023	92·6	0 3 10
1 Do. Peon do., at Rs. 3 do. ...	36 0 0	36 0 0			
Contingencies.....	12 0 0	12 0 0			
1 Vaccinator by Peint State, at Rs. 17½ per mensem.	210 0 0	210 0 0	1,612	97·4	0 3 0
1 Do. Peon do., at Rs. 6 do. ...	72 0 0	72 0 0			
Contingencies at Rs. 1 do. ...	12 0 0	12 0 0			
Total.....	522 0 0	522 0 0	2,635	95·5	0 3 3
Southern Circle.					
1 Vaccinator by Sanglee, at Rs. 12½ per mensem.	150 0 0	150 0 0	772	94·3	0 7 2
1 Do. Peon do., at Rs. 4½ do.	54 0 0	54 0 0			
Contingencies, at Rs. 10 do.	120 0 0	120 0 0			
2 Vaccinators by Meeruj, at Rs. 27 do.	324 0 0	324 0 0	1,391	98·3	0 5 6
2 Do. Peons do., at Rs. 8 do.	96 0 0	96 0 0			
Contingencies, at Rs. 4¼ do.	51 0 0	51 0 0			
2 Vaccinators at Koorundwar, at Rs. 18 do.	216 0 0	216 0 0	560	96·8	0 8 9
2 Do. Peons do., at Rs. 8 do.	96 0 0	96 0 0			
Contingencies, at Rs. 6¼ do.	75 0 0	75 0 0			
1 Vaccinator at Moodhole, at Rs. 10 do.	120 0 0	120 0 0	686	95·0	0 5 6
1 Do. Peon do. at Rs. 4 do.	48 0 0	48 0 0			
Contingencies, at Rs. 4 do.	48 0 0	48 0 0			
1 Vaccinator at Ramdroog, at Rs. 10 do.	120 0 0	120 0 0	769	100·	0 3 7
1 Do. Peon do. at Rs. 4 do.	48 0 0	48 0 0			
Contingencies	.....	.....			
1 Vaccinator at Jumkhundee, at Rs. 10 do.	120 0 0	120 0 0	454	91·9	0 9 9
1 Do. Peon do. at Rs. 5 do.	60 0 0	60 0 0			
Contingencies, at Rs. 6¼ do.	75 0 0	75 0 0			
11 Vaccinators in Kolapoor State, at Rs. 165 do.	1,980 0 0	1,955 0 0	14,090	98·8	0 3 1
10 Do. Peons in Kolapoor State, at Rs. 47 do.	564 0 0	564 0 0			
Contingencies, at Rs. 21½ do.	258 0 0	258 0 0			
Kolapoor Civil Hospital and Infantry Hospital	.....	.....	464	.....	.....
4 Vaccinators by Sattara Jagheerdars, at Rs. 47 do.	564 0 0	564 0 0	3,386	92·2	0 4 3
4 Do. Peons by Sattara Jagheerdars, at Rs. 18¼ do.	219 0 0	219 0 0			
Contingencies, at Rs. 6-5-0 do.	75 12 0	75 12 0			
Total	5,481 12 0	5,456 12 0	22,572	97·3	0 4 0

1	2			3			4	5	6		
	Sanctioned.			Expended.			Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.		
	Rs.	a.	p.	Rs.	a.	p.			Rs.	a.	p.
D.—Paid by Native Chiefs or Landlords—*continued.*											
Western Circle.											
1 Vaccinator by Sawunt Warree State, at Rs. 15 per mensem	324	0	0	324	0	0	5,873	92·8	0	0	11
3 Peons by Sawunt Warree State, at Rs. 6 per mensem											
1 Vaccinator by Jowar State, at Rs. 15 per mensem	180	0	0	180	0	0	2,148	94·2	0	1	4
Total.....	504	0	0	504	0	0	8,021	93·1	0	1	1
Northern Circle.											
2 Vaccinators by Maharaja of Edur, at Rs. 20 each per mensem	480	0	0	480	0	0	3,844	95·8	0	2	4
2 Vaccinators' Peons by Maharaja of Edur, at Rs. 5 each per mensem...	120	0	0	120	0	0					
Do. Contingencies.....	24	0	0	24	0	0					
3 Vaccinators by Mahee Kanta, at Rs. 15 each per mensem	540	0	0	557	0	0	5,964				
Contingencies, at Rs. 1 each do.	36	0	0								
2 Vaccinators by Dewan of Puhlunpoor, 1 at Rs. 22 per mensem.	264	0	0	342	0	0	3,501				
1 at Rs. 12 per mensem.	144	0	0								
2 Vaccinators' Peons by Dewan of Puhlunpoor, at Rs. 6 each per mensem.	144	0	0								
Contingencies at Rs. ½ each do. ...	12	0	0								
1 Vaccinator by Nawab of Rhadunpoor, at Rs. 18 per mensem	216	0	0	282	0	0	1,057				
1 Vaccinator's Peon by Nawab of Rhadunpoor, at Rs. 5 per mensem.	60	0	0								
Contingencies, at R. ½ per mensem...	6	0	0								
1 Vaccinator by Thakores of Wow, Thurrad, Warye, Morevara, Santulpoor, Charchut, Tehrwara, and Deodur, at Rs. 22 per mensem.....	264	0	0	336	0	0	1,777				
1 Vaccinator's Peon do. at Rs. 6 do.	72	0	0								
2 Vaccinators by Fine Fund of the Political Superintendent of Pahlunpoor, 1 at Rs. 20 per mensem.	240	0	0	597	0	0	3,228				
1 at Rs. 18 do.	216	0	0								
2 Vaccinator's Peon do. at Rs. 6 each do.	144	0	0								
1 Vaccinator by the Nawab of Cambay, at Rs. 15 per mensem	180	0	0	240	0	0	2,256				
1 Vaccinator's Peon by the Nawab of Cambay, at Rs. 5 per mensem.....	60	0	0								
1 Vaccinator by Raja of Dhurmpoor, at Rs. 15 per mensem	180	0	0	92	0	0	1,107				
1 Vaccinator's Peon by Raja of Dhurmpoor, at Rs. 6 per mensem	72	0	0								
Contingencies, at Rs. 2 do.	24	0	0								
Total.....	3,498	0	0	3,072	0	0	22,734	95·8	0	2	4

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number vaccinated.	Percentage of Success, excluding those Unknown from the Total.	Cost of each Successful Case.
D.—Paid by Native Chiefs or Landlords—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Sind Circle. 1 Vaccinator by Meer Ali Murad, at Rs. 25 per mensem	300 0 0	300 0 0	1,260	100·	0 5 0
1 Vaccinator's Peon by Meer Ali Murad, at Rs. 7 per mensem ...	84 0 0	84 0 0			
Total.....	384 0 0	384 0 0	1,260	100·	0 5 0
Kattiawar Circle. 1 Native Supt. by Joonaghur State, at Rs. 25 per mensem	300 0 0	300 0 0			
1 Native Supt. by Bhownuggur, at Rs. 20 per mensem	240 0 0	240 0 0			
1 Vaccinator by Noanuggur State, at Rs. 25 per mensem	300 0 0	300 0 0			
1 Vaccinator by Noanuggur State, at Rs. 20 per mensem	240 0 0	240 0 0			
23 Vaccinators by Chiefs of Kattiawar, at Rs. 15 each per mensem..	4,140 0 0	4,140 0 0			
4 Do. at Rs. 12 do. do.	576 0 0	576 0 0			
3 Do. at Rs. 10 do. do.	360 0 0	360 0 0			
2 Do. at Rs. 8 do. do.	192 0 0	192 0 0			
2 Do. at Rs. 15 do. do.	180 0 0	180 0 0			
38 Do. Peons, do., at Rs. 5 each do.	2,280 0 0	2,280 0 0			
8 Do. do. at Rs. 6 do. do. ...	576 0 0	576 0 0			
Total.....	9,384 0 0	9,384 0 0	44,939	95·9	0 3 6
Rewa Kanta Circle. 2 Vaccinators by Loonawarra, at Rs. 18 each per mensem.	306 0 0	294 12 9			
1 Do. Peon do., at Rs. 4-5-10 do.	39 4 6	39 4 6			
2 Vaccinators by Rajpeepla, at Rs. 18-15-3 do.	219 15 0	217 15 0			
Rs. 15-11-4 do.	188 8 0	188 8 0			
2 Vaccinators' Peons by Rajpeepla, at Rs. 4-5-10 each per mensem	104 12 0	104 12 0			
2 Vaccinators by Barrea, at Rs. 20 per mensem.	240 0 0	240 0 0			
Rs. 18 do.	90 0 0	84 0 0			
2 Vaccinators' Peons by Barrea, at Rs. 4-5-10 each per mensem	72 11 7	72 11 7	10,166	94·9	0 3 6
1 Vaccinator by Balasinore, at Rs. 13-1-5 per mensem.	65 7 1	64 7 1			
1 Do. Chota Odeypoor, at Rs. 18 do.	216 0 0	205 0 0			
1 Do. Peon do., at Rs. 4-5-10 do.	52 6 0	52 6 0			
1 Vaccinator by Soonth and Kuddana, at Rs. 18 per mensem	216 0 0	212 0 0			
1 Vaccinator by Sunkeira Mewas, at Rs. 18 per mensem	216 0 0	214 0 0			
1 Vaccinator's Peon by Sunkeira Mewas, at Rs. 4-5-10 per mensem	52 6 0	52 6 0			
Total.....	2,079 0 0	2,042 0 0	10,166	94·9	0 3 6
Total paid by Native Chiefs and Landlords.	21,852 12 0	21,364 12 0	112,327	96·1	0 3 4
Grand Total.....	1,52,234 0 0	1,36,201 0 0	424,774	96·7	0 5 6

Note.—As the cost is calculated on the total successful, it would be well for column No. 4 to show the total of successful vaccinations (primary as well as re-vaccinations) instead of the total vaccinated.

A.—VACCINE DEPARTMENT.

STATEMENT No. IV.—Showing Results of the Year 1869-70 *as compared with those of each of the previous five years in Bombay Presidency.*

1	2	3	4	5				6	7	8	9
				Number of Vaccinators.							
				A.	B.	C.	D.				
Year.	Total Number of Persons vaccinated.	Number Successful.	Ratio per cent. Successful, excluding those Unknown from the Total.	Paid by State.	Paid from other Sources.	Total.	Number previously employed as Inoculators or Native Practitioners.	Cost of whole Vaccine Establishment.	Cost of Travelling Allowances and Contingencies.	Total Cost.	Cost of each Successful Case.
								Rs.	Rs.	Rs.	Rs. a. p.
1864.....	299,700	277,639	96·4	132	64	196	.....*	†	†	†	† .....
1865.....	325,852	301,622	96·1	132	90	222	.....	†	†	†	† .....
1866.....	342,790	319,035	93·9	134	102	236	.....	†	†	†	† .....
1867.....	356,446	333,638	96·7	134	118	2 52	.....	†	†	†	0 5 7
1868.....	393,865	370,216	97·3	134	126	260	.....	†	†	1,11,524	0 4 2
1869-70 ...	424,774	397,622	96·7	134	141	275	.....	1,18,389	17,812	1,36,201	0 5 6

* We tried to employ Inoculators, but, as a rule, they would not remain, the restraint of regular service being irksome to them.

† These lines cannot be filled up correctly because we have no account of Municipalities' and Native States' expenditure.

B.—DISPENSARY VACCINATION.

STATEMENT No. V.—Showing particulars of Vaccination in each Circle of Superintendence in the Bombay Presidency during the Year 1869-70.

1	2	3		4		5		6	7	8	9														10				11		12
											Primary Vaccinations.														Re-Vaccinations.				Percentage of Successful Cases, excluding those Doubtful from the Total.		
											A.		B.					C.					D.								
											Sex.		Caste.					Age.		Result.											
Circle.	Name and Rank of Superintendent of Vaccination.	No. of Native Superintendents of Vaccination attached to the Dispensary. 1869-70.	1868.	No. of Vaccinators attached to the Dispensary. 1869-70.	1868.	Total Number of Persons vaccinated. 1869-70.	1868.	Collectorate, Political Agency, or Native State for the population of which the Dispensary is provided.	Population of Area included in the last column.	Name of Dispensary.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful and Doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those Doubtful.	Unknown.	Total.	In Primary Vaccinations.	In Secondary Vaccinations.	Average Number of persons vaccinated by each Vaccinator.
Central.	W. R. Gordon, M.B., Assistant Surgeon.	..	..	1	1	1,565	1,641	Poona Town ..	* 30,000	Civil Hospital ..	988	577	74	1,150	276	65	..	577	988	1,323	242	..	1,565	..	..	..	..	84·5	..	1,565
		..	..	..	..	76	96	Do. ..	* 80,416	Charitable Dispensary	46	30	..	74	2	..	..	23	53	57	10	9	76	..	..	..	..	85·0		
		..	..	1	1	949	671	Sholapoor Town	† 60,000	Civil Hospital ..	518	431	10	667	244	..	28	691	258	802	102	45	949	..	..	..	..	89·6	..	949
		..	..	..	..	201	78	Do.	† 28,646	Charitable Dispensary	102	99	..	156	45	..	..	86	115	164	26	11	201	..	..	..	..	86·3		
		..	..	1	1	..	..	Dhoolia Town..	....	Civil Hospital ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...		
		..	..	1	1	476	1,013	Nassick „ ..	22,878	Do. ..	230	246	6	418	42	..	10	234	242	424	52	..	476	..	..	..	..	89·1	..	476
		..	..	1	1	1,045	1,010	Ahmednuggur Town ..	39,000	Do. ..	661	384	24	716	177	..	128	618	427	978	67	..	1,045	..	..	..	..	93·6	..	1,045
		..	..	..	..	229	137	Bagulkote „ ..	12,120	Charitable Dispensary	140	89	..	169	60	..	..	158	71	216	13	..	229	..	..	..	..	94·2		
		..	..	..	..	41	90	Punderpoor „ ..	13,000	Do. ..	23	18	..	40	1	..	..	20	21	17	17	7	41	..	..	..	..	50·1		
		..	..	..	..	23	55	Peint „ ..	300	Do. ..	12	11	..	23	..	..	..	8	15	19	2	2	23	..	..	..	..	90·4		
		..	..	..	..	167	108	Dhurrumgaum „ ..	3,873	Bheel Corps Hospital	85	82	1	155	11	..	..	107	60	165	2	..	167	..	..	..	..	98·8		
		..	..	..	..	52	39	Barsee „ ..	....	Charitable Dispensary	24	28	..	52	..	..	..	29	23	36	7	9	52	..	..	..	..	83·5		
Total ..		..	..	5	5	4,824	5,566				2,829	1,995	115	3,620	858	65	166	2,551	2,273	4,201	540	83	4,824	..	..	..	..	88·4	..	767
Southern.	Assistant Surgeon.	..	..	1	1	733	362	Karwar Town..	9,975	Civil Hospital ..	403	330	101	542	84	..	6	100	633	604	98	31	733	..	..	..	..	86·0	..	733
		..	..	1	1	2,038	3,177	Sattara „ ..	22,919	Do. ..	1,121	917	19	1,901	118	..	..	822	1,216	1,831	33	174	2,038	..	..	..	..	98·2	..	2,038
		..	..	1	1	627	535	Belgaum „ ..	30,000	Do. ..	346	281	20	422	178	..	7	426	201	611	16	..	627	..	..	..	..	97·4	..	627
		..	..	1	1	835	661	Dharwar „ ..	30,000	Do. ..	430	405	15	550	268	2	..	266	569	718	117	..	835	..	..	..	..	85·9	..	835
		..	..	..	..	224	73	Kurrar „ ..	9,660	Charitable Dispensary	114	110	..	178	46	..	..	97	127	194	24	6	224	..	..	..	..	88·5		
		..	..	..	..	149	18	Honore „ ..	4,586	Do. ..	94	55	18	124	7	..	..	27	122	141	8	..	149	..	..	..	..	94·6		
		..	..	..	..	101	38	Sirey „ ..	4,064	Do. ..	76	25	16	68	17	..	..	4	97	90	9	2	101	..	..	..	..	90·9		
		..	..	..	..	41	5	Waie „ ..	9,657	Do. ..	17	24	..	26	15	..	..	13	28	24	12	5	41	..	..	..	..	61·5		
		..	..	..	..	27	..	Moondegode „ ..	....	Do. ..	17	10	..	13	14	..	..	18	9	27	..	..	27	..	..	..	..	100·		

	J. Raby,	..	..	..	..	179	..	Gokak „ ..	11,000	Do. ..	113	64	..	128	51	..	..	55	124	135	25	19	179	..	..	..	..	96·8		
		..	..	..	..	86	25	Hullial „ ..	4,162	Do. ..	48	38	12	56	18	..	..	11	75	76	3	7	86	..	..	..	..	96·2		
		..	..	..	..	258	..	Hooblee „ ..	35,278	Do. ..	136	122	7	178	73	..	..	58	200	241	17	..	258	..	..	..	..	93·4		
		..	..	..	..	157	16	Yellapoor „ ..	1,130	Do. ..	83	74	9	144	34	..	..	12	145	110	47	..	157	..	..	..	..	70·		
		..	..	..	..	41	..	Soopa „ ..	454	Do. ..	18	23	2	36	3	..	..	2	39	36	2	3	41	..	..	..	..	94·7		
		..	..	..	..	155	..	Gudduck „ ..	16,637	Do. ..	78	77	..	146	9	..	..	37	118	104	33	18	155	..	..	..	..	75·9		
		..	..	..	..	46	75	Mahabuleshwur	Unkn.	Dispensary	21	25	3	37	6	..	..	10	36	25	8	13	46	..	..	..	..	75·7		
Total ..		..	..	4	4	5,697	4,985				3,117	2,580	232	4,519	941	2	13	1,958	3,739	4,967	452	278	5,697	..	..	..	..	91·6	..	1,038
Western.	H. J. Blanc, M.D., Assistant Surgeon.	..	..	1	1	1,188	1,342	Rutnagherry Town	20,789	Civil Hospital ..	715	473	2	804	382	..	..	152	1,036	847	326	15	1,188	..	..	..	..	72·2	..	1,188
		..	..	..	..	296	382	Vingorla „ ..	10,618	Charitable Dispensary	161	135	2	294	..	..	..	88	208	275	12	9	296	..	..	..	..	95·8		
		..	..	..	..	161	325	Alibagh „ ..	4,704	Do. ..	84	77	..	147	3	..	11	71	90	136	25	..	161	..	..	..	..	84·4		
		..	..	..	..	102	336	Bandora „ ..	7,746	Do. ..	54	48	43	44	13	..	2	31	71	70	26	6	102	..	..	..	..	76·0		
		..	..	..	..	149	109	Coorla „ ..	2,704	Do. ..	101	48	41	55	51	..	2	80	60	93	28	28	149	..	..	..	..	76·8		
		..	..	..	..	64	..	Oorun „ ..	6,216	Do. ..	41	23	6	33	21	2	..	21	43	64	..	..	64	..	..	..	..	100·		
		..	..	..	..	43	37	Callian „ ..	8,000	Do. ..	28	15	1	26	12	4	..	13	30	32	8	3	43	..	..	..	..	80·		
		..	..	..	..	39	87	Bhewndy „ ..	9,130	Do. ..	22	17	..	11	28	..	..	5	34	24	5	10	39	..	..	..	..	82·7		
		..	..	..	..	348	252	Dapoolee „ ..	8,942	Do. ..	202	146	1	319	28	..	..	72	276	288	60	..	348	..	..	..	..	82·8		
		..	..	..	..	476	28	Sawunt Warree „ ..	7,570	Do. ..	242	234	90	334	52	..	..	212	264	386	90	..	476	..	..	..	..	81·1		
		..	..	..	..	68	..	Matheran „ ..	....	Dispensary	38	30	..	63	5	..	..	11	57	58	10	..	68	..	..	..	..	85·2		
Total ..		..	..	1	1	2,934	2,898				1,688	1,246	186	2,132	595	6	15	765	2,169	2,273	590	71	2,934	..	..	..	..	79·3	..	1,188
Northern.	M. B. Colah, M.D. (Uncovenanted).	..	..	1	1	1,650	2,840	Surat Town ..	90,000	Civil Hospital ..	861	819	19	1,376	164	45	76	959	721	1,523	52	105	1,650	..	..	..	..	96·7	..	1,650
		..	..	..	..	6	..	Do. „ ..	....	Jail	4	2	..	4	2	..	..	2	4	5	1	..	6	..	..	..	..	83·3		
		..	..	1	1	1,131	1,266	Broach „ ..	30,000	Civil Hospital ..	691	440	7	767	296	61	..	650	481	1,071	60	..	1,131	..	..	..	..	94·6	..	1,131
		..	..	1	1	951	796	Kaira „ ..	12,539	Do. ..	584	367	2	847	53	..	49	829	122	725	226	..	951	4	4	7	15	76·2	50·0	966
		..	..	..	..	117	34	Dholka „ ..	20,000	Charitable Dispensary	69	48	..	75	42	..	..	106	11	110	7	..	117	..	..	..	..	94·0		
		..	..	..	..	144	122	Veerungaum „ ..	18,077	Do. ..	86	58	..	118	26	..	..	106	38	134	10	..	144	..	..	..	..	93·0		
		..	..	..	..	278	44	Dakore „ ..	7,348	Do. ..	155	123	..	266	11	1	..	149	129	266	10	2	278	..	..	..	..	96·3		
		..	..	..	..	151	4	Bulsar „ ..	8,000	Do. ..	80	71	..	96	35	20	..	93	58	113	38	..	151	..	..	..	..	74·8		
		..	..	..	..	179	..	Borsud „ ..	11,176	Do. ..	100	79	3	161	15	..	..	119	60	144	28	7	179	..	..	..	..	83·7		
		..	..	..	..	89	..	Nerind „ ..	20,000	Do. ..	54	35	..	71	18	..	..	37	52	82	2	5	89	..	..	..	..	97·6		
		..	..	..	..	168	19	Dhollera „ ..	22,158	Do. ..	93	75	..	136	32	..	..	108	60	135	11	22	168	..	..	..	..	92·4		
		..	..	..	..	542	..	Gogo „ ..	8,227	Do. ..	286	256	8	248	286	..	..	209	333	479	48	15	542	..	..	..	..	90·8		
		..	..	..	..	199	..	Nowsaree „ ..	1,385	Victoria Dispensary....	119	80	..	180	4	15	..	72	127	180	19	..	199	..	..	..	..	91·4		
		..	..	..	..	175	..	Randier „ ..	7,000	Charitable Do..	119	56	..	134	41	..	..	49	126	147	3	25	175	..	..	..	..	98·0		
		..	..	..	..	39	..	Mandvee „ ..	3,563	Do. ..	19	20	..	37	2	..	..	12	27	19	10	10	39	..	..	..	..	65·5		
		..	..	..	..	9	..	Bardolee „ ..	3,695	Do. ..	5	4	..	9	..	..	..	7	2	6	3	..	9	..	..	..	..	66·6		
		..	..	..	..	15	..	Pardee „ ..	4,603	Do. ..	12	3	..	14	1	..	..	5	10	11	3	1	15	..	..	..	..	78·5		
		..	..	..	..	25	..	Chicklee „ ..	2,500	Do. ..	10	15	..	24	1	..	..	17	8	23	..	2	25	..	..	..	..	100·		
		..	..	..	..	8	..	Elao „ ..	2,000	Do. ..	4	4	..	4	..	4	..	6	2	6	1	1	8	..	..	..	..	85·7		
		..	..	..	..	12	..	Jumboosur „ ..	11,773	Do. ..	9	3	..	11	1	..	..	..	12	11	1	..	12	..	..	..	..	91·6		
		..	..	..	..	142	..	Kuppurwunj „ ..	12,000	Do. ..	79	63	..	111	31	..	..	59	83	131	8	3	142	..	..	..	..	94·2		
		..	..	..	..	68	..	Prantej „ ..	8,000	Do. ..	29	39	..	64	4	..	..	56	12	57	5	6	68	..	..	..	..	91·9		
		..	..	..	..	200	..	Sadra „ ..	3,037	Do. ..	128	72	..	173	27	..	..	69	131	119	60	21	200	..	..	..	..	66·4		
		..	..	..	..	109	..	Dhundooka „ ..	9,608	Do. ..	50	50	..	88	21	..	..	69	40	62	32	15	109	..	..	..	..	65·9		
Total ..		..	..	3	3	6,437	5,125				3,655	2,782	39	5,014	1,113	146	125	3,788	2,649	5,559	638	240	6,437	..	..	..	..	89·7	..	1,288

* A portion of Poona population. † A portion of Sholapoor population.

1	2	3		4		5		6	7	8	9													10				11		12
											Primary Vaccinations.													Re-Vaccinations.				Percentage of Successful Cases, excluding those Doubtful from the Total.		
											A.		B.					C.					D.	A.	B.	C.	D.			
											Sex.		Caste.					Age.		Result.										
Circle.	Name and Rank of Superintendent of Vaccination.	No. of Native Superintendents of Vaccination attached to the Dispensary. 1869-70.	1868.	No. of Vaccinators attached to the Dispensary. 1869-70.	1868.	Total Number of Persons vaccinated. 1869-70.	1868.	Collectorate, Political Agency, or Native State for the population of which the Dispensary is provided.	Population of Area included in the last column.	Name of Dispensary.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful and Doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those Doubtful.	Unknown.	Total.	In Primary Vaccinations.	In Secondary Vaccinations.	Average Number of Persons vaccinated by each Vaccinator.
Sindh.	J. Williams, M.D., Assistant Surgeon.	..	..	1	1	3,933	3,035	KurracheeTown	100,000	Civil Hospital ..	2,219	1,714	103	992	2,261	71	506	1,685	2,248	3,422	377	134	3,933	..	..	..	..	91·9	..	3,933
		..	..	..	..	240	..	Do. Jail ..	....	Jail Do. ..	236	4	..	22	218	..	..	..	240	161	79	..	240	..	..	..	..	67·0	..	240
		..	..	..	..	38	25	Do. ..	....	Charitable Dispensary ..	22	16	..	10	24	4	..	13	25	26	5	7	38	..	..	..	..	53·8		
		..	..	1	1	2,162	1,847	HydrabadTown	40,000	Civil Hospital ..	1,401	761	65	1,100	960	1	36	1,318	844	2,153	9	..	2,162	..	..	..	..	99·5	..	2,162
		..	..	1	1	1,224	1,240	Shikarpoor " ..	45,000	Do. ..	596	628	..	740	431	..	53	1,196	28	1,183	18	23	1,224	18	..	..	18	98·5	100·	1,242
		..	..	..	..	180	85	Ketty Bunder " ..	2,000	Dispensary ..	97	83	2	82	96	..	..	9	171	133	29	18	180	..	..	..	..	82·1		
		..	..	..	..	165	265	Tatta " ..	6,000	Do. ..	100	65	..	70	95	..	..	17	148	146	19	..	165	..	..	..	..	88·5		
		..	..	..	..	10	69	Jerruck " ..	2,000	Do. ..	6	4	..	9	1	..	..	6	4	6	4	..	10	..	..	..	..	60·		
		..	..	..	..	75	88	Bola Khan's Tanda " ..	1,600	Do. ..	43	32	..	18	57	..	..	35	40	59	16	..	75	..	..	..	..	78·7		
		..	..	..	..	45	133	Sehwan " ..	5,000	Do. ..	21	24	..	6	39	..	..	26	19	45	..	..	45	..	..	..	..	100·		
		..	..	..	..	69	88	Mehur " ..	2,500	Do. ..	35	34	..	18	51	..	..	43	26	64	..	5	69	..	..	..	..	100·		
		..	..	..	..	371	410	Larkhana " ..	6,000	Do. ..	244	127	..	233	138	..	..	287	84	350	21	..	371	..	..	..	..	94·3		
		..	..	..	..	615	717	Sukkur " ..	12,000	Do. ..	372	243	13	270	321	..	11	379	236	581	11	23	615	..	..	..	..	87·1		
		..	..	..	..	289	390	Rohree " ..	10,000	Do. ..	154	135	..	142	147	..	..	199	90	284	5	..	289	..	..	..	..	98·3		
		..	..	..	..	97	97	Taroosha " ..	6,000	Do. ..	58	39	..	65	32	..	..	15	82	89	8	..	97	..	..	..	..	91·8		
		..	..	..	..	140	07	Halla " ..	4,500	Do. ..	86	54	1	79	60	..	..	52	88	135	5	..	140	..	..	..	..	96·4		
		..	..	..	..	149	2 42	Allyarka Tanda " ..	6,000	Do. ..	88	61	..	84	65	..	..	55	94	130	19	..	149	..	..	..	..	87·2		
		..	..	..	..	204	126	Mahomed Khan's Tanda.	4,509	Do. ..	121	83	..	76	128	..	..	49	155	184	2	18	204	..	..	..	..	98·9		
		..	..	..	..	110	145	Meerpoor Buttora Town ..	4,500	Do. ..	50	60	..	72	38	..	..	52	58	105	5	..	110	..	..	..	..	95·5		
		..	..	..	..	8	63	Mittee " ..	2,000	Do. ..	5	3	..	8	..	..	..	..	8	..	8	..	8	..	..	..	..	..		
		..	..	..	..	30	126	Nuggur Parkur " ..	1,200	Do. ..	16	14	..	30	..	..	..	9	21	28	2	..	30	..	..	..	..	93·3		
		..	..	..	..	7	156	Oomerkote " ..	5,000	Do. ..	5	2	..	2	1	..	4	4	3	5	2	..	7	..	..	..	..	71·4		
		..	..	..	..	143	44	Kippra " ..	2,000	Do. ..	81	62	..	110	33	..	..	33	110	124	19	..	143	..	..	..	..	86·7		
		..	..	..	..	..	46	Jacobabad	15,000		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Total ..		..	..	3	3	10,304	9,644				6,056	4,248	184	4,238	5,196	76	610	5,482	4,822	9,413	663	228	10,304	..	..	..	..	93·4	..	2,526

KATTIAWAR. E. R. BUTLER, M.D., Surgeon.	..	..	1	1	1,215	308	Bajkote Town ..	17,500	Civil Hospital ..	713	502	5	923	235	6	46	743	472	1,000	215	..	1,215	..	..	..	..	82·3	..	1,215
	..	..	..	..	4	24	Wudwan „ ..	....	Wudwan Dispy.	2	2	..	..	..	..	4	..	4	4	..	..	4	..	..	..	..	100·		
	..	..	..	..	96	..	Joonaghur „ ..	....	Manickwara do.	52	44	..	82	14	..	..	12	84	92	4	..	96	..	..	..	..	95·8		
	..	..	..	..	..	32	.....	....	Sonapoora do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Total ..	..	..	1	1	1,315	344				767	548	5	1,005	249	6	50	755	560	1,096	219	..	1,315	..	..	..	..	83·3	..	1,215
ADEN.* J JAMES, M.D., Surgeon.	..	..	1	1	844	725	Aden	25,000	Civil Hospital ..	589	255	9	29	284	1	521	172	672	692	152	..	844	..	..	..	..	81·9	..	844
KUTCH.* DR. DORABJEE HORMUSJEE.	..	..	3	3	610	624	Bhooj, Mandvee, and Anjar and Districts.....	400,000	Dispensaries ..	310	300	..	356	254	..	..	154	456	550	60	..	610	..	..	..	..	90·1	..	210
PRESIDENCY.*	..	..	..	..	63	..	Bombay.....	..	House of Correcton.....	63	..	23	19	21	..	..	..	63	63	..	..	63	..	..	..	..	100·		
	..	..	..	..	60	..	Do.	..	County Jail ..	58	2	6	29	24	1	..	..	60	48	12	..	60	..	..	..	..	80·		
Total ..	..	..	4	4	1,577	1,349				1,020	557	38	433	583	2	521	326	1,251	1,353	224	..	1,577	..	..	..	..	85·7	..	844
Grand Total..	..	..	21	21	33,088	29,931				19,132	13,956	789	20,961	9,535	303	1,500	15,625	17,463	28,862	3,326	900	33,088	..	..	..	..	89·6	..	1,173

* These are not Circles of Vaccinations.

TABLE No. VI.

Table of Vaccination in the Bombay Army.

		Number Vaccinated.		
		Europeans.	Natives.	Total.
European Regiments for 1869	Regiments	614	16	630
	Lines	.....	232	232
	Bazaars	.....	45	45
	Total	614	293	907
Native Regiments for 1869-70.	Regiments	16	2,322	2,338
	Lines	.....	199	199
	Bazaars	2	62	64
	Cantonment Bazaars	119	2,428	2,547
	Ordnance and other Departments	4	155	159
	Staff and Details	1	590	591
	Total	142	5,756	5,898
	Grand Total	756	6,049	6,805

TABLE No. VII.

Summary of Employment Returns of Superintendents of Vaccination for the Year 1869-70.

CENTRAL CIRCLE.

Superintendent.— Assistant Surgeon P. S. Turnbull, M.D.
" " W. R. Gordon, M.B. *(Acting).*

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.	
April 1869.	10	209	24	3,675	58 villages visited and inspected.	Dr. Gordon inspected the work of 5 Municipal Vaccinators, viz. Sangola, Punderpoor, Indapoor, Poona, and Nassick; 23 Government Vaccinators' work, viz. General Nos. 23, 168, 144, 277, 216, 37, 40, 265, 241, 207, 288, 13, 223, 53, 258, 50, 211, 60, 225, 214, 272, 140, and 269, 2 Native States' Vaccinators' work, 1 Sub-Assistant Surgeon's and 1 Apothecary's. Total 33.
May "	10	135	19	1,701	27 ditto	
June "	1	63	11	335	11 ditto	
July "	2	54	57	43	2 ditto	
August "	.....	.....	.....	.....	... ...	
September "	.....	.....	.....	.....	... ...	
October "	10	152	21	1,086	39 ditto	
November "	12	180	22	1,756	46 ditto	
December "	12	166	18	1,924	36 ditto	
January 1870.	11	171	21	1,420	34 ditto	
February "	8	122	19	1,154	31 ditto	
March "	8	254	21	919	30 ditto	
Total.....	84	1,506	183	14,013	314 ditto	

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon J. RABY.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.	
April 1869.	9	198	16	1,122	26 villages visited and inspected.	Mr. Raby examined the work of Government Vaccinators General Nos. 233, 252, 218, 57, 243, 322, 35, 228, 218, 321, 232, 231, 297, 162, 242, 205, 165, 234, 251, 203, and 208; Native States 10; Municipal 4; Dispensaries 4; Local Fund 4; and 1 Station Vaccinator. Total 44.
May ,,	11	207	13	728	15 ditto	
June ,,	1	74	6	254	9 ditto	
July ,,	1	4	1	20	1 ditto	
August ,,	1	26	4	87	3 ditto	
September ,,	2	110	3	19	2 ditto	
October ,,	5	121	10	610	15 ditto	
November ,,	12	178	14	1,017	24 ditto	
December ,,	12	273	20	1,001	34 ditto	
January 1870.	9	182	17	436	24 ditto	
February ,,	8	146	13	346	19 ditto	
March ,,	7	182	12	557	18 ditto	
Total.....	78	1,701	129	6,197	190 ditto	

NORTHERN CIRCLE.

Superintendent.— MUNCHERJEE BYRAMJEE COLAH, M.D.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.	
April 1869.	7	335	24	2,678	44 villages visited and inspected.	Dr. Colah examined the work of General Nos. 154, 311, 173, 111, 188, 221, 189, 303, 170, 91, 177, 52, 20, 296, 56, 41, 68, 127, 198, 96, and 237 Government Vaccinators; the work of 3 Native States' Vaccinators, 5 Dispensaries, and 1 Municipality's Vaccinator. Total 30.
May ,,	5	259½	24	2,578	56 ditto	
June ,,	4	219	16	1,854	27 ditto	
July ,,	.....	.....	.....	.....	... ...	
August ,,	.....	.....	.....	.....	... ...	
September ,,	.....	.....	.....	.....	... ...	
October ,,	1	103	4	369	7 ditto	
November ,,	6	295	21	1,474	36 ditto	
December ,,	5	230	16	2,172	33 ditto	
January 1870.	5	245	22	5,022	45 ditto	
February ,,	4	239½	18	3,186	30 ditto	
March ,,	7	283½	21	2,285	46 ditto	
Total	42	2,208	167	21,618	324 ditto	

WESTERN CIRCLE.

Superintendent. { Assistant Surgeon T. Cody *(Acting)*.
„ „ H. J. Blanc, M.D.

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.
April 1869.	5	143	20	1,824	54 villages visited and inspected.
May „	4	105	10	781	12 ditto.
June „	1	.....	.....	39	1 ditto
July „	.....	.....	.....	.....	
August „	.....	.....	.....	.....	
September „	.....	.....	.....	.....	
October „	4	122	10	1,082	11 ditto
November „	9	201	15	671	18 ditto
December „	10	193	15	768	12 ditto Dr. Cody gave over charge to Dr. Blanc on 1st.
January 1870.	3	99	9	860	18 ditto
February „	6	135	11	888	18 ditto
March „	8	217	15	601	22 ditto
Total.....	50	1,215	105	7,514	166 Do.

Dr. Cody examined the work of General Nos. 157, 26, 58, 130, 105, 71, 125, 166, 28, 206, and 324, and of 1 Dispensary.

Dr. Blanc examined the work of General Nos. 220, 26, 324, 33, 130, 28, 290, 326 and 166; 3 Dispensaries, and 1 Municipal Vaccinator.

There were 14 Government Vaccinators, 1 Municipal Vaccinator's work, and 4 Dispensarie's examined in this Circle. Total 19.

SIND CIRCLE.

Superintendents.— { Assistant Surgeon J. Ffolliott.
„ „ J. Williams, M.D.

Months.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	Summary of Remarks.
April 1869.	13	233	13	2,066	84 villages visited and inspected.
May „	.....	.....	.....	.....	Dr. Ffolliott gave over charge to Dr. Williams, Civil Surgeon of Kotree, on 17th.
June „	.....	.....	.....	.....	
July „	10	244	8	421	4 villages visited and inspected.
August „	6	344	8	346	3 ditto
September „	8	216	8	726	23 ditto
October „	10	496	10	473	23 ditto
November „	15	307	18	2,814	100 ditto
December „	17	369	17	5,498	115 ditto
January 1870.	22	415	24	2,539	98 ditto
February „	22	418	25	3,055	73 ditto
March „	6	122	5	758	25 ditto
Total.....	129	3,164	138	18,696	548 ditto

Dr. Williams inspected the work of General Nos. 294, 250, 142, 195, 78, 199, 143, 114, 77, 108, 195, and 325, being 12 Government Vaccinators; he also inspected 12 Local Vaccinators, 6 Municipal Vaccinators' work, and the vaccinations performed at 6 Dispensaries, making a total of 31.

KATTIAWAR CIRCLE.

Superintendent.—Surgeon E. R. BUTLER, M.D.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.	
April 1869.	.....	.....	.....	.....		Dr. Butler examined the work of General Nos. 144, 307, 305, 141, 32, 277, 85, and 308; also the work of 26 Vaccinators in Native States. Total 34.
May "	.....	.....	.....	.....		
June "	.....	.....	.....	.....		
July "	.....	.....	.....	.....		
August "	.....	.....	.....	.....		
September "	.....	.....	.....	.....		
October "	8	167	21	1,502	35 villages visited and inspected.	
November "	8	167	22	1,110	37 ditto	
December "	12	184	18	1,068	37 ditto	
January 1870.	13	241	26	1,366	48 ditto	
February "	14	229	22	1,724	46 ditto	
March "	18	306	26	1,363	34 ditto	
Total.....	73	1,294	135	8,133	237 ditto	

REWA KANTA CIRCLE.

Superintendent—Assistant Surgeon J. T. WELSH, M.D.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Children inspected.	SUMMARY OF REMARKS.	
April 1869.	.....	.....	.....	.....		Dr. Welsh examined the work of General Nos. 253, 254, 255, 319, and 279, and 5 Vaccinators' work in Native States. Total 10. Dr. Welsh, being in charge of the Guzerat Bheel Corps and Dohad Jail, is ordered to travel on vaccination duty for four months only in the year.
May "	.....	.....	.....	.....		
June "	.....	.....	.....	.....		
July "	.....	.....	.....	.....		
August "	.....	.....	.....	.....		
September "	.....	.....	.....	.....		
October "	.....	.....	.....	.....		
November "	11	248	24	1,497	67 villages visited and inspected.	
December "	13	170	20	807	47 ditto	
January 1870.	11	129	11	287	17 ditto	
February "	6	133	14	1,282	62 ditto	
March "	.....	.....	.....	.....	.....	
Total.....	41	680	69	3,873	193 ditto	

Vaccination.

No. 2095.

GENERAL DEPARTMENT.

Bombay Castle, 1st September 1870.

Letter from the Inspector General, Indian Medical Department, No. 2071, dated 27th July 1870—Submitting, with his remarks, the Report of the Superintendent General of Vaccination for the year 1869-70.

RESOLUTION.—During the year under review the total vaccinations amounted to 466,667, giving an increase of 32,483 over the number in the preceding year. The alleged average success was 96·2, whereas in the previous year it was 93·5. This increased success is only apparent, inasmuch as in former years, cases where the results were unknown were treated as unsuccessful, while this year they have been deducted from the grand total, and the percentage of success calculated afterwards. Had the system of former years been adhered to, the percentage of success would have been only 93·1.

2. Dr. Pinkerton admits that "Vaccinators are too apt to consider every case successful, even if there be only abortive vesicles produced." It is not the least important part of their duty to accurately test results; and it is to be feared that until the supervising agency of the Department is strengthened, this work will not be done in a satisfactory manner. The form of Village Register referred to in paragraph 16 is approved, and may be adopted. But it is obvious that the information contained in it as to success or failure will be valueless, unless some reliable system of examination is introduced.

3. The total cost of the Department was Rs. 1,36,201, which was distributed as follows :—

1st.—Government.....	Rs.	1,00,798
2nd.—Municipal.....	„	6,694
3rd.—Local Fund	„	7,344
4th.—Native States	„	21,365
Total.....	Rs.	1,36,201

The cost of each vaccination was four annas and nine pies; and of each successful one five annas and six pies. In all, 299 Vaccinators were employed.

4. The Superintendents of Circles have worked with marked zeal, especially Drs. Williams, Gordon, and Colah. The Table of the number of Stations visited and distances travelled shows very creditable results. The result of Dr. Pinkerton's references to the Presidents of the several Local Funds Committees, as to the extent of assistance that may be expected from them, will be awaited. It is certain that increased Imperial aid cannot be looked for. His Excellency in Council is satisfied that it would not be expedient to reduce the present limited amount of European Medical supervision. But it is advisable to employ an intermediate agency between the Superintendents and the Vaccinators; and the suggestion of Dr. Pinkerton, to appoint Native Assistant Superintendents selected from the Vaccinators, will probably be found the most feasible, if the pay of rural Vaccinators can be met from Local Funds.

5. It seems conclusively proved that the plan of obtaining lymph from tubes instead of on ivory points is the best. Two packets containing each twenty-five tubes will be ordered, one from the National Vaccine Establishment, London, and the other from the Central Vaccine Institution of Scotland.

6. His Excellency in Council has read with great interest the account of the success that has attended the introduction of animal vaccination. So far from the people entertaining any prejudice against it, they appear to prefer it to the ordinary mode. The Inspector General is requested to direct all Civil Surgeons to make themselves acquainted with the process; and the Superintendents of Vaccination are to take every opportunity of instructing them and the Medical Officers in charge of Dispensaries.

Much credit is due to Dr. Blanc for having introduced this important discovery into India, and to Mr. Anunta Chundroba for the manner in which he has worked the system in Bombay. The thanks of Government are also due to Mr. Crawford and Dr. Hewlett for the effectual aid they have rendered.

7. The suggestions contained in paragraph 15, as to the manner in which Superintendents, when on tour, should examine into and report on the state of Dispensaries, have the entire approval of Government, and are to be adopted.

8. It is satisfactory to notice that there has been an increase in the number of Vaccinators maintained at the cost of Municipalities. In all there are now thirty-four. Of these, only four are found to be employed in Guzerat; and His Excellency in Council considers that the large towns in that province might fairly be called upon to support Vaccinators. The Municipality of Bombay is also to be requested to contribute.

9. The Director of Public Instruction will be requested to co-operate with the Superintendent General, with a view to ensuring, as far as possible, all boys attending Government Schools being protected against small-pox.

10. His Excellency in Council has pleasure in recording his entire satisfaction with the successful and energetic manner in which the administration of the Department has been superintended by Dr. Pinkerton.

(Signed) F. S. CHAPMAN,
Chief Secretary to Government.

To

The INSPECTOR GENERAL, INDIAN MEDICAL DEPARTMENT.
The COMMISSIONER IN SIND.
The REVENUE COMMISSIONER, N. D.
The REVENUE COMMISSIONER, S. D.
The MUNICIPAL COMMISSIONER for the CITY OF BOMBAY.
The HEALTH OFFICER for the CITY of BOMBAY.
The DIRECTOR of PUBLIC INSTRUCTION.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND

FOR THE YEAR 1870-71.

Bombay:
PRINTED FOR GOVERNMENT AT THE
EDUCATION SOCIETY'S PRESS, BYCULLA.

1871.

No. 2817 of 1871.

Bombay, 24th July 1871.

From The INSPECTOR GENERAL,

Indian Medical Department,

To The SECRETARY to GOVERNMENT,

General Department.

Sir,—I have the honour to forward the report on Vaccination throughout the Bombay Presidency and Sind for the year 1870-71, by Surgeon Pinkerton, M.D., Superintendent General of Vaccination.

2. The Superintendent General has had a laborious and successful year. Personally he has been earnestly engaged in adding to the thoroughness of vaccination throughout the country by organizing a system which will give a vaccinator for each talooka, and a Native Assistant Superintendent for each Zillah.

3. This is a most desirable and useful arrangement, and the best results may be expected from it. The success which has attended his labours will, I trust, receive the favourable notice of Government.

4. The Superintendent General has also visited the Bengal and Madras Presidencies, and describes the Agencies he found in operation for the spread of vaccination. I quite agree with the results of his observations; and the system set forth in para. 20 of the report has my entire approval, as being the best for the Bombay Presidency.

5. The work of the Department generally has been satisfactory.

6. There is an increase in the numbers vaccinated.

7. The work is generally described as of good quality, the percentage of success being good.

8. The lymph has been of good character, the instances being rare in which a vaccinator has been found working with inferior lymph; and when this fatal error has been discovered, means have been taken to rectify it at once.

9. No disease of any kind has been observed or reported as having been produced by the lymph in use.

A *vac*

10. I think every year a definite statement to this effect from each Superintendent should be included in the report.

11. A good deal of attention has been given to animal vaccination, the practice of which, however, should, I think, be confined to large cities, where there are special facilities for its introduction and working, and many and great difficulties in the way of the smooth and vigorous working of the older method of vaccination by human lymph from arm to arm.

12. The real protecting power of animal lymph has not been universally accepted; until it has stood the test of experience and trial it will be wise not to use it indiscriminately, but under a thorough supervision and in certain well-defined centres. In this way, some approximate test will be supplied as to its efficacy in comparison with human lymph in the presence of an epidemic of small-pox.

13. I regret to observe that progress has not been made in Dispensary vaccination. As these institutions are now inspected and reported upon by Superintendents of Vaccination, it is possible that in time an increased interest in the work will be created and better results follow.

14. In conclusion, I would respectfully urge that the time has fully come for some special attention to be paid to the condition of the city of Bombay, in which small-pox is endemic and destroys annually a large number of lives. I believe vaccination to be as capable as ever of protecting from small-pox, and that, as a rule, most of the deaths from this disease might be prevented, and will be eventually prevented, should Government be pleased to introduce a compulsory Vaccination Act.

I have the honour to be,

Sir,

Your most obedient Servant,

A. WRIGHT,

Inspector General, Indian Medical Department.

REPORT

ON

VACCINATION THROUGHOUT THE BOMBAY PRESIDENCY AND SIND

FOR THE YEAR 1870-71.

This is the third annual report of the Superintendent General of Vaccination.

Divisions of the report.

2. The report is divided into the usual heads :—1st, a statement of the working of the Vaccination Department, in which is condensed the chief points of the reports of the Superintendents of Vaccination; 2nd, extracts from the reports of Superintendents of Vaccination and other officers holding civil charges; and 3rd, the tables of figures showing the numbers vaccinated in each talooka or town, as well as many other particulars regarding cost, &c; also the vaccinations in the Army and Summaries of the Superintendents' monthly employment reports.

The year for report should be changed back to the natural year.

3. I mentioned in my report for 1869-70 that the Government of India had changed the year from the natural to the official for reporting on the annual progress &c., of vaccination. When the subject of that change was under consideration I gave my opinion against it, chiefly because there would often be changes taking place among the Superintendents of Vaccination just about the time the annual Report would fall due. This is well exemplified this year, by Dr. Williams having gone just before his report became due, and the acting officer sent in annual returns in the old forms. I have now also to place on record another objection to the change of the year. It is this, the recent orders &c. issued regarding vital statistics throughout India, direct that the registration returns &c. are to be compiled according to the natural year, and the Government of India expect that

i *vac*

the progress and benefits of vaccination will be more manifest if we can register our vaccinations according to the registration districts for births, &c. This we can do easily, and already have done so, as far as we can; but having changed the vaccination year from the natural to the official, there will be some difficulty in making correct and precise comparisons between the number of vaccinations and the number of births, and also in making correct comparisons between vaccinations and small-pox deaths, because of the difference of the year for vaccination and registration of births and deaths. I am of opinion that the vaccination year should be the natural year, and correspond with the year for registration of births, &c. I know perfectly well from eight years experience that the Government of India need not fear that the tour of Superintendents will in any way be interrupted by the annual papers falling due on 1st January instead of 1st April.

Government peregrinating establishment of vaccinators.

4. The strength of the Government peregrinating establishment of vaccinators, peons &c., was the same in 1870-71 as in the preceding year, up to 1st December last, when the six vaccinators and 3 peons of the Presidency Circle were taken over by the Municipality of Bombay, and Government relieved of all charges on account of vaccinators in the Island of Bombay.

Government Station vaccinators.

5. I mentioned in my last report that the Government of India wanted all stations to pay for their own vaccinators. After considerable correspondence, Government in their Resolution No. 1481, dated 24th June 1870, were pleased to "approve of the principle that towns should be required to pay for the vaccinators stationed in them; and the Superintendent General is authorized at once to remove all station vaccinators under Civil Surgeons, and to utilize their services as may seem best to him in the different Circles." This order of Government could not be at once carried out owing to the vaccinators' peons being omitted, but Goverment issued final instructions in their Resolution No. 3101, dated 19th December 1870. As the year was then drawing to a close, I thought it advisable to transfer the station vaccinators and peons on 1st March last, so that they received their first pay with the Circle establishments at the commencement of the official year 1871-72. I may state that there are now no Government Civil Station Vaccinators, and instead of the 18 Civil Stations having a Government vaccinator, the following maintain their own vaccinators from Municipal funds:—Poona, Ahmednuggur, Sattara, Sholapore, Dhoolia, Nassick, Belgaum, Dharwar, Broach, Kurrachee, Hydrabad, Shikarpoor,

and Aden. Rutnagherry, Karwar, and Kaira being small towns, do not, I think, require a special vaccinator each, and will be attended to by the vaccinators of these three talookas. Surat will not maintain a vaccinator. The municipality of that large town passed a Resolution that "they do not consider it to be the duty of the Municipality to take the place of the Imperial Government in employing vaccinators, though they may occasionally supplement existing action by grants-in-aid." I do not care to express any opinion on the above Resolution, but it is difficult to understand the principle of only giving a grant-in-aid, in a city almost large enough to employ two vaccinators, and still more difficult for me to use a grant-in-aid, for every grant I get must represent the annual cost of at least one vaccinator. Surat and Randier might at least unite to provide a vaccinator for both towns. The Rajkote Civil Station vaccinator has, like all the others, been transferred to the Circle Establishment, and as there is a vaccinator kept by the Chief for Rajkote town and the surrounding villages, it was unnecessary to ask the town to maintain another one.

Municipal Vaccinators.

6. The number of Municipal vaccinators was increased by eighteen during the past year, chiefly owing to the transfer of the Government Station vaccinators to Circles of Vaccination, as detailed in the preceding paragraph. Several of the large towns entertained each a Municipal vaccinator in the place of the Government Station vaccinator, which they hitherto had attached to the Civil Hospital. In last year's report I anticipated that Government would be relieved of the expenditure on account of vaccination in all towns which require the entire services of a vaccinator. I can now say that my anticipation has been almost realized, the town of Surat being the only exception. I still trust that the municipality of Surat will see that it is only fair that they should pay for their vaccinator, since that town should have the whole services of a vaccinator. There are still a few large towns which never had a Government vaccinator specially for themselves, such as Vingorla, Randier, Jumboosur, and others, which might I think keep up each a vaccinator of their own. I think every town of over 20,000 inhabitants would be better to have a vaccinator to itself, and Superintendents should try to induce such towns to entertain a vaccinator. It is true that the annual births in a population of 20,000 souls would give too little employment for a vaccinator all the year round, but the Superintendents can allot a few of the neighbouring villages to a municipal vaccinator and so increase his work. The following is a list of the towns which maintain their own vaccinators :—

Circle.	Name of Town.	Name of Collectorate.	Number of Municipal Vaccinators.	
			1870-71.	1869-70.
CENTRAL	1. Poona	Poona	2	2
	2. Indapoor	Do.	1	1
	3. Kheir	Do.	1	...
	4. Ahmednuggur	Ahmednuggur	1	1
	5. Sholapoor	Sholapoor	1	1
	6. Barsee	Do.	1	1
	7. Punderpoor	Do.	1	1
	8. Sangola	Do.	1	1
	9. Barramuttee	Do.	1	1
	10. Khanapoor	Sattara	1	1
	11. Mân	Do.	1	1
	12. Kurrar	Do.	1	1
	13. Walwa	Do.	1	1
	14. Koregaon	Do.	1	1
	15. Malseerus	Do.	1	1
	16. Khatow	Do.	1	1
	17. Nassick	Nassick	1	1
	18. Dhoolia	Khandeish	1	...
			19	17
SOUTHERN	1. Kulladghee	Kulladghee	1	1
	2. Bagulkote	Do.	1	1
	3. Beejapoor	Do.	1	1
	4. Belgaum	Belgaum	1	1
	5. Uthnee	Do.	1	1
	6. Hooblee	Dharwar	1	1
	7. Gudduck and Bettegherry	Do.	1	1
	8. Sircy	North Canara	...	1
			7	8
WESTERN	1. Tanna	Tanna	1	1
	2. Panwell &	Do.	1	1
	3. Oorun			1
			2	3
NORTHERN	1. Ahmedabad	Ahmedabad	2	2
	2. Veerumgaum	Do.	1	1
	3. Dholka	Do.	1	1
	4. Dhundooka	Do.	1	...
	5. Neriad	Kaira	1	...
	6. Broach	Broach	1	...
			7	4

Circle.	Name of Town.	Name of Collectorate.	Number of Municipal Vaccinators.	
			1870-71.	1869-70.
SIND	1. Kurrachee	Kurrachee	1	...
	2. Kotree	Do.	1	1
	3. Hydrabad	Hydrabad	1	...
	4. Shikarpoor.....	Shikarpoor	1	...
			4	1
PRESIDENCY ...	Bombay.....	Bombay	11	...
	Aden	.....	1	...
		Grand Total.....	51	33

Besides the above, the town of Dharwar has also agreed to pay for its own vaccinator, as has also the town of Sattara from the commencement of 1871-72.

Whenever a Municipal vaccinator works in villages around the Municipal town which pays him, a list of the names of the villages is given to him by the Superintendent of the Circle, so that the Talooka and Municipal vaccinators may not clash. There is still considerable room for an increase of Municipal vaccinators, and I trust Superintendents will use their best endeavours with communities of 20,000 souls or more to induce them to maintain their own vaccinators. When I had the honour recently of speaking to His Excellency the Governor on several subjects connected with vaccination, His Excellency remarked that probably the most convenient method of working Municipal vaccination, would be by receiving an annual grant from each of the Municipalities, and in return the Vaccination Department should keep the town vaccinated. I think something of this kind should be done, so as to have Municipal vaccination thoroughly under the control of the Superintendents. The Muncipalities in a few cases might object to this arrangement, but it would be undoubtedly a good one, and as it has been done by the Local Fund Committees I cannot see any difficulty in the Muncipalities doing so also. It is very seldom there is any difficulty with a Municipality, but neither our time nor energy should ever be wasted in correspondence about the dismissal of a Municipal vaccinator. I have frequently stated my opinion that a Municipal vaccinator should not be entertained, dismissed, nor punished without the approval of the Superintendent of Vacci-

nation of the Circle, and in the case of entertainment or dismissal the sanction of the Superintendent General should be obtained. This may appear to be almost too careful, but I write this after much consideration, and I think it is not right to leave the dismissal of a vaccinator entirely in the hands of Municipalities, because they generally take little interest in vaccinaton, nor in the hands of the Superintendent,—simply because of the many changes which take place among our Superintendents. A new Superintendent is occasionally disappointed and annoyed with carelessness or disobedience on the part of a vaccinator, and at once jumps at the idea that the man should be made an example of, and he probably wishes to dismiss or degrade him, quite ignoring the fact that perfection on Rs. 14 per mensem is a chimera. For ordinary small faults a small fine is, I think, ample punishment, and if the fault be repeated supersession is a very good punishment. Although I like to treat our vaccinators kindly, still whenever a man commits a crime such as falsifying his records, I think he must be dismissed the service without any consideration or mercy. But Superintendents should be careful to discriminate between clerical errors and falsifying of records. In the Central Circle there was an increase of two Municipal vaccinators, one in Dhoolia and the other in Kheir. In the Southern Circle there was one less, the Sircy Municipality having ceased to keep a vaccinator. I will not urge anything against this as their town is too small to keep a vaccinator going above a couple of months in the year. In the Western Circle Dr. Blanc reduced one municipal vaccinator by joining Oorun and Panwell in one charge; this has worked very well, for the one vaccinator did more than the two in the preceding year, and at a saving of Rs. 60 in the year. In their resolution (No. 2095 dated 1st September 1870, para 8.) on my last report, Government took notice of there being only 4 Municipal vaccinators in Guzerat. I have much pleasure in stating that there are now 7; the towns of Dhundooka, Neriad and Broach having each appointed a vaccinator who is paid from Municipal funds. There has also been an increase of three in Sind, the towns of Kurrachee, Hydrabad, and Shikarpoor having each employed one. I have already mentioned that there are now eleven in the Presidency Circle where there were none in 1869-70.

Local Fund Vaccinators.

7. There were 13 Local Fund vaccinators in Sind, 3 in Poona Zillah and 6 in Dharwar Zillah. I mentioned in my last report that Tanna, Colaba and Rutnagherry had provided for several vaccinators in their Local Fund budgets for 1870-71. There were employed during the past year 3 in Tanna Zillah, 3 in Colaba Zillah, 3 in Rutnagherry Zillah, and in North Canara Collectorate one was

employed in January on account of small-pox being prevalent in Moongode talooka. In Khandeish we have never been able to supply sufficient Government vaccinators; this was brought to Mr. Ashburner's notice, and he provided for six, who were at work during the past year. There were thus an increase of 16 Local Fund Vaccinators, making the total 38 as compared with 22 in 1869-70. It is six years past since in Sind the first Local Fund Vaccinators were appointed by the Hon. Mr. Mansfield, then Commissioner in Sind, and I trust it will not be long before all talooka vaccinators be paid by Local Funds, and Government entirely relieved of the expenditure on account of talooka and all other vaccinators. I have long been of opinion that the superintendence, printing and any other expenditure which is involved in the State's seeing that vaccination is as good as it ought to be, should be met from Imperial revenue, but that the people themselves should pay all expenses connected with vaccination itself in their own towns or districts; and this I hope will soon be done by the Local and Municipal funds paying for all vaccinators, vaccinators' peons, expenses of stationery for the vaccinators' use, and also the expenses incurred in carrying vaccinifers from their own to other villages to enable the vaccinators to vaccinate from arm-to-arm.

Native States' Vaccinators.

8. In the Southern Circle a vaccinator was appointed for the Native State of Savanoor. In the Kattiawar Circle two were appointed, one for Drangdra and the other for Moorvee. By the aid of Mr. Hope vaccination has been introduced into the State of Bansda by Dr. Colah. Dr. Blanc has recommended that two vaccinators be entertained by Jinjeera, and he thinks that the influence of Mr. Duff will be sufficient to ensure his recommendation being acted on. The proximity of Jinjeera to Bombay and the constant intercourse of its people with the people not only of Bombay but with those in the neighbouring British territory which bounds the State of Jinjeera, make the introduction of vaccination into that State an object of importance. It is said that small-pox is nearly always present in the Hubshee's territory, and that the inoculation of small-pox is practised: under such circumstances the disease cannot fail to be brought into the districts of Colaba as well as into the city of Bombay. There was a considerable break in the work in Johar, on account of the ill-health of the vaccinator, who resigned, and it was long before one could be got to accept a vaccinatorship in the bad climate of Johar, but now a native of the place has been appointed, who will doubtless suffer less from ill-health than a stranger.

Dr. Colah has suggested that the Native States in his Circle contribute to a vaccination fund, and that the vaccinators be paid from it instead of from the Durbars. The suggestion I consider good, and only hope that the Durbars will approve of it and adopt it. It would save the Superintendent a great deal of trouble and the vaccination of the Native States would be done more regularly and better too. There has been a considerable increase of Native States' vaccination in Kattiawar and Rewa Kanta, a small increase in Sind and a smaller in Kutch. In all the other Circles there was a decrease, which I trust is only temporary, and hope that in next report the numbers will be again higher. I do not think our Superintendents can do very much more than they are doing in Native States, and the Chiefs generally give their aid and countenance to vaccination when the subject is brought before them. When I consider that many of the Chiefs maintain vaccinators more in deference to the opinions of their friends, the Political Officer and Superintendent of Vaccination, I am inclined not to urge the subject of vaccination much on them, and feel disposed to wait and trust to the people themselves appreciating it. On the whole then I think vaccination in the Native States is progressing as well as we have any right to expect, though perhaps not as well and as quickly as we would like.

Suggestions by Dr. Colah that the Native States in his Circle should contribute to a vaccination fund, from which the vaccinators should be paid.

9. For several years back Government, as well as the Medical Department, have been conscious of the necessity of having a supervising agency between the Superintendents of Circles and the vaccinators, and Government directed me in their Resolution No. 1939, dated 13th August 1869, to place myself in communication, through the Revenue Commissioners, with the several Presidents of Local Fund Committees, and ascertain how far they are disposed to contribute towards paying the rural vaccinators, so that the imperial money which goes to pay them might be used for strengthening the staff of Superintendents. After obtaining precise information regarding the number of talookas in each Zillah, their population and area, I addressed a letter to the two Revenue Commissioners and to the Commissioner in Sind, in which I sketched a scheme, based on the instructions of Government, that each talooka should have a vaccinator and each collectorate a Native Assistant Superintendent of Vaccination. I stated in my sketch that what is now known in India and Europe as the Bombay System of Vaccination has been found to work so well, and is so suitable to this

Native Assistant Superintendents.

Contributions from Local Funds towards paying rural vaccinators.

country, that it has been generally adopted all over India. Its main features are that the vaccinators peregrinate from village to village and are under the control, direction, and supervision of a Medical officer, the Superintendent of vaccination, who also peregrinates through his Circle. The want of Native Assistant Superintendents was for many years little felt in this Presidency because the number of the vaccinators in each circle was few, and for many years they worked together in close proximity to the Superintendent, who could constantly watch over their work and conduct, but in recent years—especially within the last fifteen—the prejudices against vaccination have in a great measure disappeared, the mass have begun to appreciate it, the intelligent few to ask for it; the number of vaccinators has greatly increased and the area which they work over is enlarged, so that they can no longer work all together in close proximity to the Superintendent, indeed two or three years are now required by a Superintendent to visit all his vaccinators and inspect their work: nor can this be helped, for a Superintendent has now, in the smallest circle, 29 vaccinators, and 74 in the largest, spread over circles of from 20,000 to over 60,000 square miles in size; no single officer can by any possibility exercise a close supervision over so many vaccinators spread over the length and breadth of such areas. This is undoubtedly the main cause for the reproach of false returns so often made against the Vaccination Department. But a false return is a minor evil compared with bad vaccination. Now without closer supervision than we have at present there is very little certainty, indeed there is no certainty, of all vaccinators always vaccinating so carefully as always to obtain the best possible results, and to obtain less is an evil the magnitude of which cannot be reckoned. Doubtless our method of vaccinating from arm-to-arm is a great preventive against very much bad vaccination, but notwithstanding this, I am very decidedly of opinion that we should have Native Assistant Superintendents to assist the Superintendents of Circles; and as far as I can see, the only way we are likely to get them is in the way suggested by Government, that Local Funds should bear the expenditure on account of rural vaccinators, and the imperial money thus set free used to pay the Native Assistant Superintendents.

I may mention that some few years ago, when Dr. Pearson reorganized the Vaccine Department of the North Western Provinces on the model of the "Bombay system," he did not fail to strike the one blot in our system, viz. the want of Native Assistant Superintendents, and provided them in his reorganization; since then he has frequently spoken very highly of them. In 1865 when I organized, under the instructions of the Honourable Mr. Mansfield, then Commissioner in Sind, the Sind Local Funds Vaccination Estab-

lishment, I included in it two Native Assistant Superintendents, who have ever since been found of the greatest use.

10. It took quite a year to complete the correspondence with Local Fund Committees, and I could only submit the result to Government in my letter No. 777 dated 30th January last, along with my proposals on the manner of carrying out the wishes of Government to have a vaccinator in each Talooka, and a Native Assistant Superintendent in each Zillah, which has undertaken to maintain its rural vaccinators.

Acknowledgments due to Mr. Havelock, Mr. Rogers, and Sir William L. Merewether.

11. I think the Local Fund Committees have in general met my proposals in a truly liberal spirit. I would here beg to acknowledge the aid which I have received from the Revenue Commissioners, in the Southern Division from Mr. Havelock, in the Northern from Mr. Rogers, and in Sind from Colonel Sir William L. Merewether. The whole of the correspondence took place through them as ordered by Government, and it must have caused them considerable trouble. They have most heartily entered into my scheme, and most courteously given me their assistance, which I beg Government will acknowledge.

12. I will now proceed to state what provision has been made in the Local Fund budget for 1871-72 by each zillah.

I. *In the Southern Division.*

Ahmednuggur Collectorate.

Scheme for paying all rural vaccinators from Local Funds in order that the Imperial money so set free may be used for strengthening the staff of Superintendents.

1*st*. Ahmednuggur collectorate has 11 talookas, an area of about 6,000 square miles, and a population of about 700,000. I asked for Rs. 3,264 per annum to pay 10 vaccinators, 10 peons, and contingencies, but only got Rs. 1,200. This was about the amount Government was spending on 4 rural vaccinators in this Collectorate, and it would appear that the Committee were unwilling to grant more than a sum equal to the Government expenditure. This was introducing a principle quite wide of our intention, which Government had declared to be that the money set free should be used for strengthening the inspecting staff of the Department. As the grant of Rs. 1,200 per annum is utterly insufficient to maintain 10 vaccinators and 10 peons, I proposed that a sum of Rs. 1,728 be paid from the Imperial grant, to make up the number of vaccinators to 10. There should be 11 vaccinators as there are 11 talookas, but one talooka was transferred from Nassick just about the time my proposals

were first sent to Local Fund Committees, and so it was overlooked. As the grant from Local Funds is considerably less than what I proposed Government should continue to spend, I did not recommend the appointment of a Native Assistant Superintendent in the Ahmednuggur Collectorate. There is a Municipal vaccinator in the town of Ahmednuggur.

Poona Collectorate.

2*nd*. Poona Collectorate has 8 talookas, an area of about 4,272 square miles, and a population of 606,000. My proposals were accepted by the Local Fund Committee, and I recommended that there be 8 vaccinators and peons at an expenditure of Rs. 2,472 per annum from Local Funds, and that there be a Native Assistant Superintendent paid from the Imperial money set free. There will now be in this Collectorate 8 Local Fund and 4 Municipal vaccinators. Two of the latter are for the large city of Poona and the other two for the towns of Kheir and Indapoor. There is also a Military vaccinator in Poona, who takes charge of the Cantonment vaccination in Poona and Kirkee. I am of opinion that this vaccinator is unnecessary, and that the two Municipal vaccinators in Poona are sufficient, but the Municipality made some objection to their vaccinators being employed out of Municipal limits. This is an objection that I think Dr. Turnbull, the Superintendent of the Central Circle, will be able to overcome. It really is an advantage to the Municipal vaccinators to have good large charges, and to have charge of a large Sudder bazaar like Poona should be a pleasure to a vaccinator, because vaccination is compulsory in all our cantonments, and there he can depend on maintaining his lymph without difficulty. Vaccination in Poona City and Camp requires to be organized. There have been four vaccinators, including the Civil Station vaccinator recently transferred to the Central Circle Establishment, at work for some years back in Poona, and two good vaccinators could have done the work easily and probably better at half the cost. Dr. Turnbull will give this subject his attention during the rainy season.

Sholapoor Collectorate.

3*rd*. Sholapoor Collectorate has six talookas, an area of nearly 7,000 square miles, and a population of nearly 600,000. The President of the Local Fund Committee, Mr. T. Bosanquet, met with some little opposition to my scheme from one of the District Committees, but the sum I asked for was at length sanctioned. In this Collectorate, Government will be entirely relieved of all expenditure on account of vaccinators. I recommended 6 vaccinators with their peons, at a cost of Rs. 1,872 per annum; this of course includes contingencies. There are 5 Municipal vaccinators in this Collectorate, one in each of the following

towns—Sholapoor, Barsee, Punderpoor, Sangola, and Barramuttee. Except Sholapoor, not one of these towns has sufficient population to keep a vaccinator permanently at work; they are therefore allotted the neighbouring villages in a radius of 3 miles or more, and this reduces the area for the talooka vaccinators which would otherwise average about 1,000 square miles to each. There will be a Native Assistant Superintendent for this zillah, who will look after 6 Local Fund and 5 Municipal vaccinators, and also 1 in the Native State of Akulkote.

Sattara Collectorate.

4th. Sattara Collectorate has 12 talookas, an area of about 8,350 square miles, and a population of close on a million. Some few years ago (1863) Municipal vaccination was first commenced in this zillah, when the Honourable F. S. Chapman was Collector of it, and Surgeon Plumptre was Superintendent of Vaccination in the Southern Circle. Since then the number of Municipal vaccinators has gone on increasing in this Presidency. In the Sattara zillah there are several Marathi Chiefs' States, four of whom keep each a vaccinator; they are Bhore, Attapadee, Jhutt, and Phulton. There has thus been in this Collectorate, Government, Municipal, and Native States' vaccinators at work for several years. Just about the time I sent in my proposals anent having Local Fund vaccinators, the Collector, Mr. Arthur, had submitted to the Revenue Commissioner, Southern Division, a scheme for distributing the vaccinators better, and his scheme very closely resembled my proposals as regards the number of vaccinators required for the Collectorate. My proposals were that 12 Local Fund vaccinators and peons should be entertained at a cost of Rs. 3,672 per annum, and this sum has been sanctioned. The Sattara Municipality has sanctioned the maintenance of a vaccinator for that town. There are at present 6 other Municipal vaccinators, each of whom has a group of Municipal towns in his charge. I am not quite certain whether it will be necessary to keep on quite so many, but I trust to Dr. Turnbull and the Collector arranging about this; however, I think there will be employment for them all for some time to work up arrears, after that, the 19 vaccinators would each have an average of about 50,000 of a population to look after, which will probably be found to give ample employment to each of the 19. As Government will be entirely relieved of all charges on account of vaccinators, Sattara Collectorate will have a Native Assistant Superintendent. I think there should be two Native Assistant Superintendents in this zillah, as there will be 23 vaccinators, including the 4 in the Native States, and when the final arrangements are made, this might be considered, but until all the Collectorates get a Native Assistant Superintendent this can stand over.

5th. Belgaum Collectorate has 7 talookas, an area of about 5,000 square miles, and a population of about 800,000. Mr. Grey, the Collector, informed me that the Local Fund Committees accepted my proposals, and there will be 8 rural Local Fund vaccinators at a cost of Rs. 2,472 per annum, including 8 peons and the contingencies. Several of the talookas are large and populous and could give employment to 2 vaccinators each. The talookas of Belgaum and Uthnee will have two, inasmuch as they have each a Municipal vaccinator. Chickordee talooka is the most populous and will have two Local Fund vaccinators. If a Municipal vaccinator could be appointed in any of the towns in Purusghur talooka and another in any of the towns in Sumpgaum talooka, they would find plenty of work as well as the talooka vaccinators, for these talookas contain over 100,000 souls each. This Collectorate will have a Native Assistant Superintendent, who may also occasionally see some of the Native States' vaccinators who are within, or closely connected with, this Collectorate. But I trust that eventually we will have Native Assistant Superintendents for Native States.

Belgaum Collectorate.

6th. Kulladghi Collectorate has 8 talookas, an area of 6,389 square miles and a population of over 700,000. In my proposals to the Local Fund Committee I recommended that there should be 8 vaccinators, but the Committee only granted Rs. 2,240; so I can only give 7 vaccinators, who with their peons, &c. will cost Rs. 2,196 per annum. There are 3 Municipal vaccinators, 1 in Kulladghi town, 1 in Bagulkote, and 1 in Beejapoor. These men work in the villages surrounding the Municipal town which pays each of them. I hope that next year the Local Fund Committee will sanction another vaccinator so as to give one for each talooka. There will be a Native Assistant Superintendent here to look after the 10 vaccinators. I went through this collectorate last cold season, and I must say that vaccination was about as backward in it as in any part of our territory. Kulladghi has been unfortunate, it has been changed from one Circle of Superintendence to another several times, and has been, I fear, much neglected. It now belongs to the Southern Circle and last cold season received considerable attention from the Superintendent, Mr. Raby. I asked the acting Collector, Mr. Monk Mason, to call the attention of Mamlutdars to the necessity of giving their aid and countenance to the vaccinators, and he very readily did so. After we get the new system into order, Kulladghi will, I have no doubt, soon be as well vaccinated as the other Collectorates.

Kulladghi Collectorate.

Dharwar Collectorate.

7th. Dharwar Collectorate has 11 talookas, an area of nearly 5,000 square miles, and a population of 860,000. Mr. E. P. Robertson entirely agreed with my proposals and added that, if the Native Assistant Superintendents could also be travelling medical men, with medicines to supply to the sick poor, much good might be done. I think this suggestion well worth our best consideration, and if we could get men from the Medical Subordinate Department to be active Native Assistant Superintendents of Vaccination, I see no reason against their being so employed. There will be in this zillah 11 vaccinators and 11 peons at a cost of Rs. 3,396 per annum, including all contingencies. The town of Hooblee maintains a vaccinator, and the towns of Gudduck and Bettygherry jointly maintain another from Municipal funds, and Dharwar has commenced to do so too. The Native State of Savanoor has recently appointed a vaccinator. There will be a Native Assistant Superintendent to look after these 15 vaccinators. Government will no longer pay anything for vaccinators in Dharwar Collectorate.

Canara Collectorate.

8th. Canara Collectorate has 7 talookas, an area of 4,314 square miles (estimate), and a population of 367,582. My proposals were after some little correspondence accepted by the Local Fund Committee. There will be 7 vaccinators with their peons at a cost of Rs. 2,196 per annum, including contingencies and a Native Assistant Superintendent. There are no Municipal vaccinators in this Collectorate

Rutnagherry Collectorate.

9th. Rutnagherry Collectorate has 8 talookas; the area is not exactly known but may be estimated at 7,000 square miles, and the population is about 700,000. My proposals were accepted at once by the Local Fund Committee, and a grant of Rs. 3,588 given. There will be 11 vaccinators and 11 peons, costing Rs. 3,396 per annum. There are no Municipal vaccinators in this Collectorate. There will be a Native Assistant Superintendent for this zillah.

II. In the Northern Division.

Ahmedabad Collectorate.

10th. Ahmedabad Collectorate has 7 talookas, an area of 3,865 square miles, and a population of about 700,000. The Local Fund Committee accepted my proposals and granted the sum asked for. There will be 7 vaccinators and 7 peons at a cost of Rs. 2,196 per annum. There are also 2 Municipal vaccinators in the City of Ahmedabad for its 150,000 people, there is one in Dholka, one in Veerumgaum, and one in Dhundooka. There will be a Native Assistant Superintendent to look after these 12 vaccinators.

Kaira Collectorate.

11*th*. Kaira Collectorate has 6 talookas, an area of 1,729 square miles, and a population of nearly 700,000, or about 400 to the square mile. This is the most populous Collectorate in the Bombay Presidency. I regret to say that Mr. Elliot informed me that the Local Fund Committee would not give anything towards vaccination, so I recommended that 8 vaccinators should be kept up out of the Imperial grant. The town of Neriad has appointed a Municipal Vaccinator. There will be no Native Assistant Superintendent for this zillah, because no Imperial money has been set free from which to pay him. *

Broach Collectorate.

12*th*. Broach Collectorate has 5 talookas, an area of about 1,600 square miles, and a population of about 300,000. I recommended that 4 vaccinators should be provided for. The Committee at first only granted Rs. 732, but I think the grant has since been raised to Rs. 1,464. At the time I submitted my scheme I was only certain of the smaller sum, and so recommended that 2 vaccinators and 2 peons be paid by Local Funds and 2 from the Imperial grant at a total cost of Rs. 1,224 per annum. If sufficient have been provided to pay all the vaccinators from Local Funds then Broach Collectorate should have a Native Assistant Superintendent. The town of Broach has entertained a Municipal vaccinator.

Surat Collectorate.

13*th*. Surat Collectorate has 8 talookas, an area of about 1,600 square miles, and a population of about 460,000. The Local Fund Committee have declined to give any thing to vaccination, so I recommended that 8 Government vaccinators should be continued there, at a cost of Rs. 2,472 per annum. There cannot be a Native Assistant Superintendent appointed for this zillah until the Local Fund Committee pay for their vaccinators. There are no Municipal vaccinators in this zillah. I look forward to Mr. Hope, the Collector, soon being able to give me a contribution both from Local and Municipal Funds.

Khandeish Collectorate.

14*th*. Khandeish Collectorate has 16 talookas, an area of about 10,000 square miles, and a population of about 800,000. Mr. Ashburner, the Collector, approved of my proposals, but when he came to make up his Local Fund budget for 1871-72 he could not spare me more than Rs. 3,000. There will be 10 vaccinators and

* Since this was written and sent to the press I am happy to say that I have been informed by Mr. Sheppard, Acting Collector of Kaira, that the Local Fund Committee have consented to pay for their vaccinators, and have granted Rs. 2,664; so this Collectorate will now be entitled to a Native Assistant Superintendent.

10 peons paid by Local Funds at a cost of Rs. 2,952, and I recommended that six should be paid from the Imperial grant at a cost of about Rs. 1,968 per annum; and in consideration of the Local Fund grant being liberal, I also recommended that Khandeish should have a Native Assistant Superintendent. During the past year there were 6 Local Fund vaccinators employed in Khandeish. There is 1 Municipal vaccinator in Dhoolia, making 17 in all.

Nassick Collectorate.

15*th*. Nassick Collectorate has 10 talookas, an area of about 10,000 square miles, and a population of about 600,000. I proposed that there should be 10 vaccinators paid from Local Funds, but I only got a grant of Rs. 1,500, which will be expended on 5 vaccinators and 5 peons with their contingencies. To give one to each talooka I recommended that 5 vaccinators be provided by Government at an equal cost of Rs. 1,500. As Government would thus pay the same for vaccinators as the Local Funds there could be no Native Assistant Superintendent appointed. The town of Nassick maintains a Municipal vaccinator. I deeply regret that we cannot have a Native Assistant Superintendent in this large zillah, and I trust that next year the grant will be sufficient to enable us to pay for a vaccinator for each talooka and then a Native Assistant Superintendent will be appointed and paid from the Imperial grant.

Tanna Collectorate.

16*th*. Tanna Collectorate has 11 talookas, an area of about 4,100 square miles, and a population of about 600,000. My proposals were accepted, and 11 vaccinators and 11 peons provided for, at a cost of Rs. 3,396 per annum. 4 Local Fund vaccinators were provided for in 1870-71, and 3 were at work. The town of Tanna maintains a Municipal vaccinator, and the towns of Panwell and Oorun maintain 1 conjointly. There is also a vaccinator in the Native State of Johar. There will be a Native Assistant Superintendent in this zillah to look after these 14 vaccinators.

Colaba Collectorate.

17*th*. Colaba Collectorate has 5 talookas, an area of about 1,360 square miles, and a population of 276,000. The Local Fund Committee has granted sufficient to pay for all their vaccinators, and in my letter No. 821, dated 8th February last, I recommended that there be 5 vaccinators and 5 peons at a cost of Rs. 1,596 per annum. Dr. Blanc, the Superintendent of the Western Circle, has recommended that there be 2 vaccinators appointed in the Native State of Jinjeera, and he thinks that Mr. Duff's influence will be able to get them appointed. There are no Municipal vaccinators in this Zillah. As Colaba Collectorate has taken over all the charges on account of vaccinators, there will be a Native Assistant

Superintendent, who may be able to take charge of one talooka in Rutnagherry and one in Tanna, and thus equalize somewhat the number of vaccinators to be supervised by the Native Assistant Superintendent in each of these three zillahs.

Panch Mahals.

18*th*. Panch Mahals has 5 talookas, an area of about 1,600 square miles, and a population of about 170,000. My proposal to the Local Fund Committee was accepted, and there will be 5 vaccinators and 5 peons at a cost of Rs. 1,596 per annum. There are no Municipal vaccinators in this district, nor do I think any are required. There are 10 Native States' vaccinators in the Rewa Kanta, which with the Panch Mahals constitute the Rewa Kanta Circle. There will be one Native Assistant Superintendent, who will be able to look occasionally over the men in the Rewa Kanta as well as in the Mahals. The Superintendent of the Rewa Kanta Circle can only travel 4 months in the year,—as he is Medical Officer of the Guzerat Bheel Corps and in charge of the Dohud Jail, so a Native Assistant Superintendent was very necessary here.

III. In The Province of Sind.

Province of Sind.

Very exact figures regarding the areas and population in Sind are not obtainable, but roughly speaking there are about 63,000 square miles, including Khierpore territory, and probably about 2,500,000 of a population. Many parts of Sind are desert and very thinly populated. As I was over five years Superintendent of Vaccination in Sind, I was able from personal knowledge to form an opinion as to the number of vaccinators required for the province. The following shows what has been sanctioned for each Collectorate or district.

Kurrachee Collectorate.

19*th*. Kurrachee Collectorate has provided for 9 vaccinators with their peons at a cost of Rs. 2,580, and Rs. 1,006 to pay for the carriage of lymph-children and to pay the parents of them for the time they lose while with the vaccinators, and to pay travelling batta to the 9 vaccinators at the rate of 3 annas each per diem while in the districts. The total grant is Rs. 3,778 per annum, but the expenditure will not exceed Rs. 3,586. The distances to be covered are great, and the vaccinators almost invariably keep a pony. The towns of Kurrachee and Kotree each keep a Municipal vaccinator. There will be a Native Assistant Superintendent to supervise these 11 vaccinators.

Hydrabad Collectorate.

20*th*. Hydrabad Collectorate has provided Rs. 3,576 for the pay of 12 vaccinators and 12 peons, Rs. 288 to pay parents of children taken from their own to other

villages for vaccine purposes, and Rs. 480 to cover the office expenses of the Superintendent in connection with the supply of paper, books, &c., to the 12 vaccinators. The total expenditure will not exceed the grant of Rs. 4,344 per annum. Hydrabad town now maintains a Municipal vaccinator. There will be a Native Assistant Superintendent in this zillah to supervise these men.

Shikarpoor Collectorate.

21*st*. Shikarpoor Collectorate has contributed the most liberally of all the Collectorates, and this is due in a great measure to its Local Funds being rich, and to Major R. R. Wallace, the acting Collector (who has been many years connected with Upper Sind) taking a great interest in vaccination. He remembers the day when small-pox was a terror in the province, and is alive to the benefits that vaccination has conferred on the Sindhis. Rs. 3,684 has been provided for 13 vaccinators and 13 peons' pay, Rs. 312 to pay parents of lymph-children taken from their own to other villages; Rs. 870 to pay batta at the rate of 3 annas per diem to the vaccinators when on duty in the districts, and Rs. 480 for office allowance to the Superintendent, similar to the grant in Hydrabad. The total grant for the year is Rs. 5,538 but only Rs. 5,346 will be required. The town of Shikarpoor now keeps its own Municipal vaccinator. There will be a Native Assistant Superintendent in this zillah.

Thurr and Parkur District.

22*nd*. Thurr and Parkur District can only contribute Rs. 400 per annum, out of which 1 vaccinator and 1 peon with the vaccinator's contingencies will be paid at a cost of Rs. 396 per annum, and it was recommended that other 5 vaccinators and 5 peons should be paid from the Imperial grant at a cost of Rs. 1,356. This is a very poor district, but Major Tyrwhitt, the Political Superintendent, promises to give a greater contribution as soon as he can afford it. There ought to be a Native Assistant Superintendent in this district as soon as there is a vaccinator for each talooka.

Frontier Upper Sind District.

23*rd*. Frontier Upper Sind District contains 3 talookas. The Local Funds are too poor to give any contribution, so 3 vaccinators and their peons to be paid from the Imperial grant at a cost of Rs. 804 per annum were included in my scheme.

Rajkote and Deesa Cantonments.

24*th*. Two vaccinators and 2 peons will be entertained for the camp and surrounding villages of Rajkote and Deesa, and paid from Imperial Funds. I doubt if there be much need for the man in Rajkote, but Government wished me to provide for the vaccination in camp, so I was obliged to keep one man there, and perhaps

it is as well not to depend on a Native State's vaccinator for the protection of Rajkote Camp.

Presidency Circle's Establishment taken over by the Bombay Municipality.

25*th*. The whole six Vaccinators of the Presidency Circle (Island of Bombay) were taken over by the Bombay Municipality on the 1st December last, and their number has been increased to 11. The cost to the Municipality will be Rs. 6,834 per annum. This includes Rs. 1,350 for animal vaccination and Rs. 420 for stationery and printing.

The objects of Government in this scheme.

13. In my proposals to Local Fund Committees and to Government I have kept steadily in view the wishes of Government, which are—

1*st*.—That each talooka should have a vaccinator:

2*nd*.—That the rural or talooka vaccinator should be paid from Local Funds.

3*rd*. That the Imperial money which at present goes to pay rural vaccinators being set free should be used to pay a Native Assistant Superintendent in each Collectorate.

Each talooka provided with a Vaccinator.

14. In my scheme nearly every talooka was provided with a vaccinator; the few exceptions are chiefly in Sind, where the population of a few talookas is too sparse to give continuous occupation to a vaccinator.

Pay and Grades of Native Assistant Superintendent.

15. From the Imperial money set free I proposed to have 5 first class Native Assistant Superintendents on a pay of Rs. 130 each per mensem, 5 second class on a pay of Rs. 100 each per mensem, and 8 third class on a pay of Rs. 75. This is only 18 Native Assistant Superintendents, but when all the Collectorates and districts pay for their own vaccinators 7 or 8 more will be required. I recommended that 25 per cent. of the above pay be reckoned as consolidated travelling allowance; and that 3 years' service in each of the two lower grades be required before a Native Assistant Superintendent can become eligible for promotion to the two higher.

Pay of Local Fund Vaccinators and Peons.

16. In most of the Collectorates the rate of pay, per mensem, of the Local Fund Vaccinators has been fixed at Rs. 24, 18, and 14—one on the former and half of the remainder on 18, and the other half on 14. The vaccinators' peons will be paid Rs. 7 per mensem all round. Each vaccinator has been

allowed Rs. 2 per mensem to buy paper, &c., and pay the parents of vaccinators for their loss of time; and each will render a monthly account of contingent expenditure.

17. In their Resolution No. 1203, dated 9th May 1871, Government has approved of the foregoing scheme with the following exceptions :—

Para. 4. "In Kaira and Surat the rural vaccinators should be withdrawn, until the Local Fund Committees in those districts shall be willing to provide for their maintenance, and no cost should be incurred in these districts on this account on the part of Government. In Ahmednuggur, Kulladghee, Broach, Khandeish, and Nassick the number of rural vaccinators should be limited to the number which can be supported from the local funds of those districts.

"5. In the Frontier of Upper Sind and the Thurr and Parkur District of Sind the same strict enforcement of local responsibility is not expedient, but in those districts the full complement of rural vaccinators should not be kept up till they can be paid for from local funds, and two vaccinators (one on Rs. 18, one on 14,) should alone be maintained by Government in Thurr and Parkur district, and one on Rs. 18, in Frontier Upper Sind District.

"6. A Native Assistant Superintendent should not be retained for Khandeish until the Local Fund Committee of that District shall provide for the maintenance of the full complement of rural vaccinators."

If Native Assistant Superintendents answer well, two Circles of Superintendence may be reduced.

18. There are at present 8 Circles of Superintendence. If the Native Assistant Superintendents be found to answer as well as I expect, then I think our Circles could be reduced to six. The Rewa Kanta Circles might be thrown into the Northern Circle, and even then it would not be as large as the Central Circle. The Western Circle might also be reduced; it consists of the Collectorates of Rutnagherry, Colaba and Tanna, and of the Native States of Sawunt Warree, Jowar and Jinjeera. Rutnagherry and Sawunt Warree might be given to the Southern Circle, and Colaba, Tanna and Jinjeera to the Presidency Circle, and Jowar to the Northern Circle. But I would strongly recommend that we should have at least 2 years, if not 3 years' experience of the Native Assistant Superintendents before making these changes, because it is easy to make dashing reductions, but not so easy to return back if our project fail.

The systems of Vaccination in Oudh, the North Western Provinces, Bengal, and Madras.

19. Before submitting my scheme to Government it was deemed advisable that I should visit Bengal and Madras Presidencies, and see how the systems of Vaccination worked there. I did so in the last rainy season, the season in which I could best get away. I regret to say I was unable to meet any of the Superintendents of the North Western Provinces, as they were in the Hills. In Oudh I saw Dr. Cameron, who was Acting Superintendent of Vaccination and Sanitary Commissioner, he very courteously gave me all the information in his power. In Oudh vaccination has, as yet, been almost confined to Lucknow and its environs. There is a Sub-Assistant Surgeon employed as Deputy Superintendent, 2 Native Superintendents and 25 vaccinators. Vaccination in Oudh is still in its infancy; the method and system may be good, but it never has been pushed. I saw Dr. Christison, the Civil Surgeon of Agra, who very kindly gave me some information about the method in vogue in the North Western Provinces. I met here one of the Native Superintendents, who had charge of 9 tehsil vaccinators and 3 Municipal vaccinators in Agra; he appears to do the duty I wish our Native Assistant Superintendents to do. The fact is the North Western Provinces adopted the Bombay system and improved on it by appointing Native Superintendents, and we will now adopt their improvement. The system in Calcutta and its suburbs is something similar to that in the North Western Provinces. Dr. Charles, the Superintendent General, has divided Calcutta into 3 divisions, in each of which there is a Sub-Assistant Surgeon, and in each of these divisions there are two gangs of vaccinators each working under a head vaccinator, who is virtually Native Assistant Superintendent of the gang, and the 3 Sub-Assistant Surgeons are similar to our Circle Superintendents, who are mostly on this side Commissioned Medical Officers, but the Sub-Assistant Surgeons in Calcutta have a much smaller area and fewer vaccinators to look after than our Superintendents. The system of working in gangs is a most excellent one where the population is dense, and in Bombay City we have begun to practise it, as well as continuing our vaccine stations where vaccination is practised on fixed mornings. There are 3 Metropolitan Circles in the neighbourhood of Calcutta under the Superintendence of Surgeon Powell. These Circles were created by Dr. Charles on the Calcutta model, and it was only recently that Surgeon Powell was appointed to be Superintendent of them. Each Metropolitan Circle has a Sub-Assistant Surgeon as Superintendent, 3 Head Vaccinators who are really Native Assistant Superintendents, each of whom has a gang of 6 or 7 vaccinators working with him. There are in all 53 vaccinators for

a population of five or six millions, the area I could not ascertain. The gang system works admirably well in Calcutta and the surrounding metropolitan circles, but it is expensive. The expense might have been kept down by letting them remain under Dr. Charles, and Dr. Powell's pay &c. would have been saved, but the Medical authorities in Calcutta were desirous of having active supervision by a Commissioned Medical Officer, and Dr. Charles could not very easily travel much, as he is Professor of Midwifery in the Calcutta Medical College. We have very few districts in which the population is dense enough to give employment for five or six vaccinators working in gangs, but it might be tried in the few that are well populated, such as Kaira and Tanna as well as in the Island of Bombay, where it is now on trial. In Madras the Circle Superintendents (Medical men) have been abolished, and there are now only the Superintendent General, Surgeon Shortt, and 23 Superintendents, who are not medical men, but men who have been selected from among the general body of 255 vaccinators. Dr. Shortt, and the Inspector General Indian Medical Department in Madras, both assured me that this system is not working at all well, and they trust that the Government of Madras will return to the Circle system, with a Medical Officer as Superintendent in each Circle, as well as the 23 men who are called Superintendents, who would then hold the position that our Native Assistant Superintendents will hold. I beg here to express my thanks for the courteous and kind attentions which I received from Dr. Charles, Superintendent General of Vaccination in Calcutta, Dr. John Cameron in Oudh (recently acting as Superintendent of Vaccination and Sanitary Commissioner) and from Dr. Shortt, Superintendent General of Vaccination in Madras. These gentlemen gave me every assistance and information in their power: and I would beg to suggest that this Government acknowledge the same through their Governments.

20. It will be seen from the foregoing that I consider the best system of vaccination for this side of India consists in having—1st, a Superintendent General; 2nd, Medical Officers as Superintendents of Circles; 3rd, a Native Assistant Superintendent for each Collectorate; 4th, a Vaccinator for each talooka; and 5th, a Municipal Vaccinator for every town of 20,000 souls or more, but that in Bombay City and in the densely populated Collectorates of Kaira and Tanna the Vaccinators might be worked in gangs as in the Calcutta system, so that they could be always under the eye of the Native Assistant Superintendent, instead of working separately.

Pay of Vaccinators higher in Bombay than elsewhere

21. In the Lower and Upper Provinces of Bengal and in Madras the pay of the Vaccinators and Native Assistant Superintendents is less than we can get men to serve for

owing chiefly to the necessaries of life being dearer.

in this Presidency, because the necessaries of life are much cheaper there than here. We might just as well expect a skilled workman in London to work for as little wages as an Indian one, as to expect a Vaccinator on this side of India to serve for as small a pay as one on the Bengal side. As long as the value of labour is measured by the value of life-necessaries this can never be.

Dispensary Vaccination.

22. Vaccination has been carried on by nearly all the Medical Subordinates and others in charge of Dispensaries, but I cannot say that much progress has been made. Some of the officers had no practical knowledge of vaccination before they took charge of a Dispensary, and take no great interest in it. On the other hand many of them do their best to further the spread of vaccination in the towns in which they live. There was an increase of vaccinations at the Dispensaries in Sholapoor, Alibagh, Dapoolie and several others as exhibited in Statement No. 5, but there is still room for much improvement at nearly all Dispensaries. I am quite alive to the difficulties that the officers in charge of Dispensaries have to contend with, and I can only trust that time will remove many of them and that Medical Subordinates and others in charge of Dispensaries will do their utmost to carry on vaccination in their Stations. Mr. Apothecary Waite, of the Khandeish Bheel Corps, Honorary Assistant Surgeon Pollard at Dapoolie, Mr. Apothecary Munday at Vingorla, Mr. Apothecary Sinclair at Kolapoor, and some few others have done well. In Ahmedabad Sub-Assistant Surgeon Ruttonjee Hormusjee took some pains to introduce animal vaccination, but did not succeed; he has given some interesting details of his experiments, which will be found in their proper place further on.

Inspection of Dispensaries by Superintendents of Vaccination.

23. When on tour last cold season the Superintendents inspected the Dispensaries which came in their routes, as directed in the 7 para. of the resolution on my last report.

Changes among the Superintendents.

24. During the past year there were a few changes among the Superintendents. In the Central Circle Dr. Turnbull returned from furlough and took over charge from Dr. Gordon. There was no change in the Southern, Western, Northern and Presidency Circles. In Sind Dr. Williams went to England on sick leave about the end of the official year and handed over his office to Dr. Roche, Civil Surgeon of Kotree. In Kattiawar, Surgeon Blomfield acted for some months and Surgeon Shepherd the rest of the year; but he also has again left and

Surgeon Blomfield is again acting. In Rewa Kanta Dr. Welsh, who had resigned some months before, handed over charge to Dr. Cody in autumn last.

Summary of the inspections of Superintendents.

25. The following table shows the inspections &c., performed by Superintendents during the year :—

Names of Superintendents.	Circles.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of vaccinated children inspected.	Number of villages visited and inspected.	Number of vaccinators whose work was inspected.
Drs. Gordon and Turnbull.....	Central	80	1,637	174	11,809	243	47
Mr. Raby	Southern ...	85	2,183	133	6,579	187	37
Dr. Blanc.....	Western	62	1,487	99	10,196	200	34
Dr. Colah	Northern ...	63	2,857	188	17,128	400	43
Dr. Williams ...	Sind	90	4,374	115	18,598	532	41
Mr. Shepherd ...	Kattiawar ...	49	1,556	139	12,168	214	39
Mr. Cody	Rewa Kanta .	31	1,120	58	4,124	146	19
	Total ...	460	15,214	906	80,602	1,922	260

It will be observed that the whole of the Superintendents have travelled well and inspected 80,602 vaccinated persons, and also the work of a large number of vaccinators. The above table shows that the Superintendents have one and all worked with a will. Dr. Williams has again inspected the greatest number of children. Dr. Colah stands very close to him. I consider that Drs. Gordon, Turnbull, Blanc and Mr. Shepherd have examined sufficient children to test the work of their vaccinators. Mr. Raby is again behind, but I can now testify from personal knowledge that it is more difficult to see a thousand children in some parts of his Circle than it is to see double that number in Sind, or the Northern Circle. Mr. Cody in his four travelling months inspected and travelled well too. Where all have travelled so much, inspected the work of so many vaccinators, and seen so many vaccinated children it is difficult for me to commend one more than another. The great amount of Mr. Williams' mileage was partly caused by his visit to Guadur on duty, and to Bombay to study the subject of animal vaccination. It would hardly be fair to judge the merits of a superintendent merely by the number of children and villages he inspected, because there are many

other duties connected with a Circle which it is very difficult to gauge, and which must be attended to as well as the more important duty of inspecting the vaccinated children. For instance Mr. Raby has taken great pains to test his vaccinators' monthly returns through the Police Superintendents, which has given him a great deal of office work.

Lymph.

26. In the Government Resolution No. 1320, dated 7th June, the Resident at Hyderabad was informed that supplies of lymph would be furnished to officers in the Hyderabad territory. This has been done by the Superintendent of the Central Circle. Lymph has also been supplied to H. H. the Rao of Kutch's establishment, and to all other applicants for it.

Supplies of English lymph received.

27. In November last I received a packet containing 24 tubes of vaccine lymph from the National Vaccine Institution, London. It was forwarded to Dr. Colah, and it succeeded in all the children vaccinated from them except one. On the 9th January last I received through the Inspector General Indian Medical Department a packet containing 26 charged vaccine tubes; 7 were issued to the Central, 5 to the Presidency, 6 to the Southern, and 7 to the Western Circle. In the Central Circle Dr. Turnbull had 14 children vaccinated from 7 tubes and ten took, many of whom had excellent vesicles. In the Western Circle 8 children were vaccinated and the result was not considered satisfactory by Dr. Blanc, who only got one good vesicle out of the lot; they all took more or less except one. In the Southern Circle Mr. Raby had 5 children vaccinated and two only proved successful. I am of opinion that never more than one child should be vaccinated from one English tube.

The lymph in general use is good.

28. The lymph in use throughout the presidency has been reported as generally good; here and there it deteriorated and was renewed. In the Western Circle Dr. Blanc reports that in November and December it deteriorated very much in many talookas, but by the middle of January he had it good every where. Dr. Colah believes that there is a tendency for the lymph to degenerate in the monsoon chiefly on account of want of care on the part of the parents of vaccinated children. Mr. Raby says that some of his vaccinators are apt to take lymph from too ripe vesicles. This has been forbidden and should not occur. The Civil Surgeons and Dispensary officers have almost unanimously reported their lymph as good.

Inoculation.

29. Dr. Blanc says that inoculation is still practised in Rutnagherry, and Dr. Turnbull saw some recent cases of small-pox inoculation in the Jowlee talooka of Sattara

collectorate, but he has taken steps to prevent the practice in future. The practice of inoculating with small-pox virus has almost disappeared, and I do not very well see how the inoculators will be able to compete with our vaccinators when we have one in every talooka. The practice is a very pernicious one and every official ought to set his face against it. When we shall have a vaccinator in each talooka no one will have any excuse for seeking inoculation, because vaccination will be within the reach of all.

Small-pox.

30. In the Central Circle there was no epidemic of small-pox, and only 3,621 cases occurred in the year 1870 of whom 321 died or about 9 per cent. Considering the population is nearly 5,000,000 the number of deaths is small. There were 556 deaths in 1870, in the Island of Bombay with its 800,000 of a population, or relatively fully eight times more than in the Central Circle. I do not see any hope of preventing deaths from small-pox in Bombay until a Compulsory Vaccination Act be passed. The disease prevailed in all the collectorates of the Southern Circle, but it must have been in a very mild form as few deaths occurred except in the talooka of Mongoode, where it appears that it was rather severe. To arrest the disease an extra vaccinator was put on there and paid out of Local Funds by Mr. Elphinstone. In the Western Circle only a few cases were brought to notice in the Rutnagherry Collectorate. The Northern Circle had an unusual immunity from small-pox. In Sind there was a great diminution of deaths from the disease as compared with the preceding year: there were 121 deaths, 86 of which occurred in the town of Kurrachee, leaving only 35 for the rest of Sind, and of these Dr. Williams ascertained that at least 5 were deaths from measles. There ought to be a column in the new form for Death Registers for measles, otherwise the deaths from that disease will be entered in the small-pox column and of course vitiate all our comparisons. I am of opinion that Government ought at once to give orders for a column for measles to be added to the new form. There were a few cases of small-pox reported in H. H. the Rao of Kutch's territory.

A column should be introduced into the new death registers for measles.

In the reports of Civil Surgeons and from Dispensaries the presence of small-pox was noted as follows:—

Poona.....	None.
Nassick.....	Commenced in February last and still continues, 5 deaths, all unvaccinated.
Dhurumgaum.	None.

Sholapoor	None.
Belgaum.	A few cases in cantonment in April and May 1870.
Dharwar.	Much less than preceding year.
Karwar	Prevalent, 17 deaths. No particulars.
Kulladghi	None.
Kolapoor	Did not prevail to as great an extent as in preceding year.
Tanna	None.
Bandora	A few cases in March.
Callian.	None.
Alibagh	Do.
Rutnagherry	None in town.
Dapoolie	Do.
Vingorla	Do.
Ahmedabad	Do.
Godra	Do.
Dhoolia	No remark regarding the disease.
Ahmednuggur	Do.
Kotree	Do.
Kurrachee	Prevalent for 3 months in this year.
Aden	Ceased in May 1870.

It appears that small-pox has been generally very little fatal up to the close of the year 1870-71, but I fear much that it is now on the increase (May), and it seems to be spreading over the whole world. I hope our vaccination will stand the test and demonstrate its power to guard from death by the most fell and loathsome of all diseases. In the last 20 years small-pox has destroyed 17,472 lives in Bombay city. I am indebted to the kind courtesy of Dr. Hewlett, Health Officer of Bombay, for the following figures :

Deaths by small-pox in Bombay Island given by quarter-years for the past 20 years.

1*st*	Quarter,	1851-70 =	6,283	deaths ; average per quarter		314
2*nd*	Do.	1850-69 =	9,401	,,	,, ,,	470
3*rd*	Do.	1850-69 =	1,338	,,	,, ,,	669
4*th*	Do.	1850-69 =	450	,,	,, ,,	22

Total.....17,472 deaths.

Need I add a word more in favour of the opinion of the Bombay Association that Bombay should have a compulsory Vaccination Act? Without it, no intelligence, no forethought on the part of the Vaccination Department can prevent small-pox being endemic in Bombay, even if it were not constantly imported, which it is, from maritime Asia. Mr. Anunta Chandroba has given some information in his report about the difficulty of carrying on vaccination in times of small-pox, because of the prejudices of some Hindoos against doing anything to arouse the wrath of the goddess Shitala (Small-pox). The real remedy is to vaccinate before the advent of the disease in any particular street, but I do not believe we will ever be able to vaccinate much over half the children born in Bombay without compulsion, nor do I believe it would be possible in any other city of an equal size without a vaccination Act rendering vaccination compulsory.

31. When small-pox appears in a place, the local officers should immediately communicate with the Superintendent of the Circle. When we shall have a vaccinator in each talooka the local officers will be able to direct the attention of the talooka vaccinator to the circumstance, and he will at once commence to vaccinate in and around the place.

Conduct of Vaccinators.

32. The conduct of the vaccinators as a whole has been good. In the Central Circle Dr. Turnbull had in no case to do more than inflict a small fine on any of the Government vaccinators. One Native State's vaccinator was dismissed for being absent without leave. In the Southern Circle one Government vaccinator was dismissed for falsifying his returns. The falsification was discovered by the Police checking a monthly return sent by the Superintendent, Mr. Raby; the man absconded, so could not be tried. In the Western Circle Dr. Blanc reduced one for drunkenness, discharged one for falsifying his records, and one was convicted by a Magistrate of having misappropriated an anna of his lymph allowance. On conviction Dr. Blanc recommended his dismissal. I felt bound to act on the recommendation as the man had been convicted of a crime, though much against my will, for instead of misappropriation it is possible that it was an error of accounts. It seemed hard to dismiss a man after many years service for such a very trifling sum. In future Superintendents of Vaccination will request and receive the permission of the Superintendent General before prosecuting a vaccinator. Dr. Blanc has a few days ago recommended this man to the merciful consideration of Government, and I place that on record, but will not support it further than by merely thus bringing it to the notice of Government. Dr. Blanc has recommended that he be reinstated in a lower grade, but adds there is no vacancy in his Circle. In the

Northern Circle two Native States' vaccinators were dismissed for falsifying. In Sind two Local Fund vaccinators were discharged by Dr. Williams for errors in their returns in the matter of re-vaccinations; the punishment was much too severe and will not occur again. It has been a most difficult thing to get vaccinators to understand the arbitrary meaning attached to the word re-vaccination. In Kattiawar Circle 2 Chiefs' vaccinators were dismissed for falsifying. In Rewa Kanta Circle one Chief's vaccinator was discharged for being absent without leave. In the Presidency Circle Mr. Anunta Chandroba reports his entire satisfaction with the conduct of his vaccinators. It is probable that we will always have a few black sheep, but I think in several instances last year we have made a few blacker than is consistent with good common sense, and in several instances the punishments were far too severe. We have no right to expect perfection, and our punishments ought to be inflicted with a just consideration of the circumstances, and in general with the object of improving rather than degrading the vaccinators as a body.

Re-vaccination.

33. In the annual returns for the year preceding the one under report the columns for re-vaccination were entirely blank. It will be remembered that in our old forms no columns existed for showing re-vaccinations separately from primary vaccinations, and any re-vaccinations which were performed were shown with primary vaccinations, indeed no distinction was made. The new forms are, in respect of showing the re-vaccinations separately, a great improvement on the old. It is now well recognized by the Medical Profession in general that infantile vaccination does not invariably protect the individual against either an attack of small-pox, or death from that disease, though it is rare that death occurs when the individual has four or more good vaccine cicatrices. It is also known that an attack of small-pox itself does not invariably protect from a second attack which may end fatally. From all the known facts it would even appear that a re-vaccination is as powerful if not more so to protect from small-pox than an attack of small-pox itself. During the past year there were according to the returns fully 30,000 re-vaccinations, but many officers and vaccinators at first entered secondary vaccinations in the re-vaccination columns, which was wrong, and has no doubt raised the number, how much I cannot say. A circular has been issued on the subject to all charges, and this will not happen again.

Variolation.

34. Dr. Blanc attempted a few times to produce small-pox in the cow by inoculating with the virus of human small-pox, but he gives no particulars of the trials. They all failed. I also tried to do so along with Dr. Charles when I was in Calcutta,

and we also failed. It is a difficult thing to achieve, but it has been several times done in India, especially by Dr. Shortt in Madras. I do not know that it is of much use to us since we have animal vaccination going on.

Retro-vaccination.

35. Mr. Cody, Superintendent of the Rewa Kanta Circle, succeeded in inoculating a calf with human vaccine virus, and he had very good and active lymph produced.

Animal Vaccination.

36. During the past year Mr. Anunta Chandroba has kept up animal vaccination in Bombay. There were a good many failures in the first half of the year, but latterly his success has been very good indeed: experience has made him more skilful. The great advantage to the Department of having animal vaccination going on in Bombay is that it enables us to do without taking so much lymph from children's arms, to which many of the parents have an insuperable objection. The cost of animal vaccination has been borne partly by the Cowasjee Jehangeer grant* and partly by the Municipality's grant. I think there is every prospect of Mr. Anunta Chandroba being able to keep up the practice permanently. During last rains Dr. Blanc practised it in Poona, but it did not seem to be appreciated by the people there. He and I both tried to get the members of the Municipal Committee to take a personal and individual interest in the matter, but I cannot say that we succeeded. Mr. Oliphant, the Collector of Poona, gave us all the assistance in his power. After the rains were over, Sub-Assistant Surgeon Balcrishna Chintoba, who is in charge of the Charitable Dispensary in Poona, continued the practice for some time, but finally lost his lymph, and also I think his inclination to be troubled with animal vaccination. An unsuccessful attempt to introduce the practice in Dharwar was made by Mr. Raby. Dr. Blanc has several times received new animal lymph from M. Warlomont for Mr. Anunta Chandroba. I would beg to recommend that Dr. Warlomont's kindness be acknowledged, through the Secretary of State for India and the Belgian Government. Dr. Colah succeeded in commencing animal vaccination in his Circle, and the experiments were continued in Ahmedabad, but ended in failure. In Sind, Honorary Assistant Surgeon Leahy has succeeded in Sukkur, but it has not yet been going on very long. In Rewa Kanta Mr. Cody succeeded with animal vaccination and gives an interesting account of it in paras. 10, 11, 12 and 13 of his report. In Kattiawar, Dr. Shepherd informs me that animal vaccination was introduced

New animal lymph received from M. Warlomont, of Belgium.

* Referred to in the 20th para. of last report.

at Wudwan, from there it was carried into several other Chiefs' states, and is now being continued at Bhownuggur by Kanajee Jairam, a native practitioner in that town, the Bhownuggur State having employed him to teach the State's vaccinators. In Bombay there is no objection raised by the natives to accept vaccination direct from the cow.

Many vaccinators able to use capillary tubes.

37. Many vaccinators are able to use capillary tubes, but many are not able. When a Superintendent is inspecting the work of a vaccinator he generally ascertains if the man knows how to use a tube, and if he does not he teaches him.

Aid from Civil and Political Officers.

38. The Superintendents unanimously acknowledge the aid they have received from the District Officers both in the Revenue and Political Departments.

Tour.

39. During the year under report I visited the Southern, Central and Western Circles. In the months of April and May I was in Matheran busy with office work; in June and July I was in Bombay, and saw the Local Superintendent of Vaccination carrying on animal vaccination. At the end of July I went to Poona, hoping to see the Bombay Vaccination Bill passed through the Legislative Council, but circumstances have delayed its introduction. Dr. Blanc had introduced animal vaccination into Poona and was practising it at the Charitable Dispensary, under considerable difficulty. In September I started from Bombay on a visit to Bengal and Madras, and returned in November. In December I commenced my cold season tour and visited the Dispensaries of Oorun and Dapoolie. At the former no work was going on, and it was arranged for Oorun to be vaccinated by the Municipal Vaccinator employed jointly by Oorun and Panwell. At Dapoolie Honorary Assistant Surgeon Pollard was giving hearty attention to vaccination. At Rutnagherry I found the Station vaccinator's lymph deteriorated, and directed him to abandon it and get good virus from the talooka vaccinator. At Vingorla I found Mr. Apothecary Munday had excellent lymph, and keeping up vaccination, but he seemed to have a good deal of trouble in doing so, and was anxious that Vingorla town should have a vaccinator of its own. From Vingorla I passed through the Native State of Sawunt Waree, in which I saw a number of recent vaccinators, but I am sorry to say they were not as good as I had seen two years before. I proceeded then to Belgaum, where I examined the work of the Government and Municipal vaccinators, and found both very good. In January I travelled with Assistant Surgeon Raby, Superintendent of the Southern

Circle, through Kulladghi Collectorate. I saw over a thousand vaccinated children in the towns of Kulladghi, Bagulkote, Hulloor, Naienglee, Mookurteehal, Hovin Hypurgee, Beejapoor, Tekodeh, and the villages around or lying on our route. The work was generally well done. In February I entered the Central Circle and met the Superintendent, Dr. Turnbull, at Jhutt; there we examined several hundreds of vaccinated children. The work and lymph were both bad. This Native State's vaccinator had evidently never been well trained, so Dr. Turnbull, with the consent of the Dufflé Sahib, attached him to his office for a time to train him. From Jhutt we marched by Shegaon, Sanund, to Attapadee, seeing some children *en route*. The vaccinations done by the Punt Prétineedee's vaccinator were very good. At Rahimutpoor and another village near Sattara I saw most excellent lymph which Luximon Babajee, the Khoregaon Municipal vaccinator, was working with. From Sattara I marched by Mahabuleshwur, and the Par Ghaut to the Western Circle, and met the Superintendent, Dr. Blanc, at Indapoor. On the 8th March we visited 4 villages, and saw 58 vaccinated children, about 7 of whom were either unsuccessful or indifferently vaccinated. On the 10th we saw 73 children in 4 more villages in the neighbourhood of Pohee, in one of which there were 9 unsuccessful out of the 30 seen. The vaccinator had put them down in the result column of "unknown." On the 12th we visited Ashtumeh, and saw 18 recent vaccinations, one of which was a failure, and 15 had 3 or more good vaccine marks. On the 13th we visited 3 villages near Roheh and saw about 64 recent vaccinations, all most excellent, except 8 in the village of Neeree. On the 14th we saw about 35 children; work fair in two villages, but bad in the third. The vaccinator said the work there had been started from tubes and at first it was not good. From the Western Circle I crossed to Bombay near the end of the year.

Dr. Williams' visit to Guadur on the Mekran Coast for the purpose of introducing vaccination into Guadur.

40. Small-pox is frequently brought into the town of Kurrachee from the Mekran Coast as well as from other parts of Beloochistan. Dr. Williams paid a visit to Guadur to try and arrange with Captain Ross, the Political Officer there, for the introduction of vaccination into Guadur and neighbourhood. Government sanctioned a small sum to be expended on this account, but Captain Ross having been absent from Guadur on special duty, no steps have yet been taken as far as I know. It is no doubt advisable to have vaccination going on at Guadur, for the sake of protecting the British employés there, but I question if it be the duty of Government to spend a penny in attempting to spread vaccination in Beloochistan. If the Belooches themselves can be induced to accept and

practise vaccination, the Department will do all in its power to further and assist such a praiseworthy step in as far as training men and supplying lymph are concerned.

Superintendents all taught how to practise Animal Vaccination.

41. During last rains all the Superintendents came either to Bombay or Poona and were taught the method of practising animal vaccination. Since then Dr. Turnbull has returned from furlough. He will learn the practice in the coming rains. Dr. Keith joined the Department in May; he has seen Honorary Assistant Surgeon Leahy practise on the heifer in Sukkur, and he now proposes starting animal vaccination in Kotree himself. In the 6th para. of the Government Resolution on my last report Government expressed a wish that Civil Surgeons should make themselves acquainted with the process of animal vaccination. A few have done so, but none, as far as I know, have practised it for any length of time. I have already mentioned that Honorary Assistant Surgeon Leahy has been practising it in Sukkur for some time, and that it was practised in Ahmedabad with little success. I think it will be as well to let Civil Surgeons take up animal vaccination voluntarily, and whenever any one wishes to practise it we will supply him with lymph, and the Superintendents of vaccination will do all in their power to show them the method of operating on the calf. As soon as the Native Assistant Superintendents are appointed I will endeavour to establish animal vaccination in one place in every collectorate.

Total number of vaccinations.

42. There is again a very considerable increase in the number of vaccine operations. I am unable to say how many *persons* were vaccinated, because, except for the Northern Circle, the returns do not show the excess of operations over persons; that is to say do not show how many persons were *primarily* vaccinated more than once. This will be shown in next report. When an unprotected person is vaccinated unsuccessfully, he is again vaccinated, and this second vaccination is technically called a primary vaccination; perhaps it would be better if we had result columns for *Primary, Secondary* and *Re-vaccinations,* such as Dr. Charles has in use in Calcutta, instead of only for Primary and Re-vaccinations.

The following figures show the number of vaccine operations for the year 1870-71 :—

		Primary Vaccinations.	Re-vaccinations.
In Civil Life	Itinerant Establishment	462,463	29,142
	Dispensary Establishment ...	26,561	977
		489,024	30,119

Total of primary vaccinations and re-vaccinations in Civil Life...	519,143
Total of primary vaccinations and re-vaccinations in the Army .	7,558
Total vaccinations in Bombay Presidency.....	526,701

Increase.

43. As compared with last year's returns there is an increase in Civil life of 61,281, but the vaccinations in Baroda territory are included in this report, and were not in my former reports. The vaccinations performed there in 1869 amounted to 22,383 and in 1870 to 23,659, our actual increase then in Civil life is 38,898. This I consider very satisfactory progress. If the population of this side of India, including Native States, be taken at 21,000,000, I think our primary vaccinations should reach close on 600,000 a year. We are still a long way from that figure. In the Army Returns there is an increase of 753. I am indebted to the courtesy of Surgeon Martin, Secretary to the Inspector General Indian Medical Department, for the returns of the Native Army, and to the courtesy of Surgeon Veale, Secretary to the Inspector General British Medical Department, for the returns of the European Army.

Percentage of success.

44. In Statement No. I the percentage in primary vaccinations is 96·2, this is half a percentum less than in last report. The percentage in re-vaccinations is 73·2, which is very high, but it is quite certain that errors were made by reckoning second vaccinations as revaccinations, so this percentage will be of no use for future comparisons or for statists. In Statement No. V, Dispensary Vaccinations, the percentage of success in primary vaccinations is 90·9, or fully one per cent. higher than in the previous report. The percentage of success in re-vaccinations at Dispensaries is 52·6, which is lower than in Statement No. I, but it is probably higher than it should be from the same cause as that which raised the percentage so high in Statement No. I.

The following shows the percentage of success in each establishment in the Bombay Presidency :—

1*st.*	Government Vaccinators	.....	95
2*nd.*	Municipalities do.	.....	94
3*rd.*	Local Funds do.	.....	95
4*th.*	Native States do.	.....	94
5*th.*	Dispensaries do.	.....	91

These percentages are all, except for Dispensaries, somewhat lower than last year, and it is owing to the percentages having been calculated on the totals

of primary and re-vaccinations combined. The following shows the correct percentages of success in each Circle and for Dispensaries :—

			In Primary vaccinations.		In Re-vaccinations.	
1*st.*	Central	Circle	96·1	Average 96·2	81·2	Average 73·3
2*nd.*	Southern	„	96·4		55·3	
3*rd.*	Western	„	96·8		74·4	
4*th.*	Northern	„	95·5		82·	
5*th.*	Sind	„	98·		62·	
6*th.*	Kattiawar	„	93·6		80·	
7*th.*	Rewa Kanta	„	94·6		59·7	
8*th.*	Presidency	„	86·6		66·3	
9*th.*	Kutch	„	92·1		...	
10*th.*	Baroda	„	95·6		...	
11*th.*	Dispensaries		91·		52·6	

From the above figures it will be seen that the average percentage of success in primary vaccination is 0·5 less than in my previous report. As directions have now been given to enter a child's name in the vaccinators' registers as often as it is vaccinated the percentages next year will be lower. Hitherto the vaccinators did not enter the result in cases of failure until the child was vaccinated twice, so our failures were very few. This new method of registering will make the vaccinators vaccinate with more care, to avoid having many unsuccessful on the first operation, but in point of fact the resulting percentage will not be as correct as that which we have hitherto shown.

Sex.

45. There is no record of the sex, caste and age of persons re-vaccinated, but of the 489,024 primary vaccinations in Civil life, as shown in Statements Nos. I. and V., 260,991 were males and 228,033 were females. This gives a percentage of 53·37 males and 46·63 females. The males were 0·3 more in 1869-70. The disparity in the number of the sexes is, I think, greater than it can possibly be in the general population. The Superintendents are giving their attention to the columns for the sexes, and I have no doubt that we will shortly have a less disparity than has hitherto been displayed in our returns.

Caste.

46. The following are the percentages of castes in primary vaccinations: Christians 0·5; Hindoos 74·9; Mussalmans 18·7; Parsees 0·2; and other castes 5·6. These percentages are almost the same as in 1869-70.

Ages.

47. The ages have not been given in the return of vaccinations performed in H. H. the Guikowar's territory, but excluding them there were 63·7 above and 36·3 under one year old in every 100 primary vaccinations. In last report there were 41·8 per cent. under one year old. I regret this falling off of the number under one year old, for infantile vaccination not only gives earlier protection but better also than primary vaccination at a later age.

48. The following figures show in which establishments the increase and decrease occurred:—

(*a*)—Government Establishment in—

	Increase.	Decrease.
1*st*—Central Circle.....	.....	1,592
2*nd*—Southern do.	.....	2,193
3*rd*—Western do.	2,258	.....
4*th*—Northern do.	.....	7,083
5*th*—Sind do.	10,420	.....
6*th*—Kattiawar do.	.....	269
7*th*—Rewa Kanta do.	.....	2,980
8*th*—Presidency do.	.....	2,056
	12,678	16,173
Deduct Increase		12,678
Decrease.....		3,495

(*b*)—Municipal Establishment in—

1*st*—Central Circle	7,842	.....
2*nd*—Southern do.	.....	5,833
3*rd*—Western do.	1,220	.....
4*th*—Northern do.	2,237	.....
5*th*—Sind do.	281	.....
6*th*—Presidency do.	4,580	.....
	16,160	5,833
Deduct Decrease.....	5,833	
Increase.....	10,327	

(*c*) Native States Establishment in—

		Increase.	Decrease.
1*st*—Central	Circle	3,076	.....
2*nd*—Southern	do.	.....	2,634
3*rd*—Western	do.	.....	2,868
4*th*—Northern	do.	.....	1,281
5*th*—Sind	do.	497	.....
6*th*—Kattiawar	do.	3,056	.....
7*th*—Rewa Kanta	do.	2,492	.....
8*th*—Kutch	do.	38	.....
9*th*—Baroda	do.	1,276	.....
		10,435	6,783
	Deduct Decrease.....	6,783	
	Increase	3,652	

(*d*)—Local Funds Establishment in—

1*st*—Central	Circle	9,326	.....
2*nd*—Southern	do.	2,874	.....
3*rd*—Western	do.	13,669	.....
4*th*—Sind	do.	7,485	.....
	Increase.....	33,354	

(*e*)—Dispensary Establishment in—

1*st*—Central	Circle	281	.....
2*nd*—Southern	do.	.....	713
3*rd*—Western	do.	.....	180
4*th*—Northern	do.	.....	1,984
5*th*—Sind	do.	.....	928
6*th*—Kattiawar	do.	.....	1,156
7*th*—Rewa Kanta	do.	116	.....
8*th*—Presidency	do.	.....	123
9*th*—Aden	do.	.....	153
		397	5,237
	Deduct Increase.....		397
	Decrease.....		4,840

49. From the foregoing figures it will be observed that there has been a decrease in the work of the 134 Government Vaccinators of 3,495. This is explained by the whole of the Government Vaccinators in the Presidency

Circle having been taken over by the Bombay Municipality from 1st December last, and to there having been several vacancies in the Northern Circle. It would be tedious to seek out the causes of every trifling increase or decrease in each establishment of each circle, but it may be useful to show below the increase and decrease in each circle itself as a whole :—

		Increase.	Decrease.
1*st*—Central	Circle.....	18,933	.....
2*nd*—Southern	do.	.....	8,499
3*rd*—Western	do.	14,099	.....
4*th*—Northern	do.	.....	8,111
5*th*—Sind	do.	17,655	.....
6*th*—Kattiawar	do.	1,631	.....
7*th*—Rewa Kanta	do.	.....	372
8*th*—Presidency	do.	2,401	.....
9*th*—Kutch	do.	38	.....
10*th*—Baroda	do.	1,276	.....
11*th*—Aden	do.	.....	153
		56,033	17,135
Deduct.....	Decrease	17,135	
	Increase.	38,898	

Causes of increase.

50. The cause of the increase in the Central, Western, Kattiawar, and Presidency Circles was an increase in the number of vaccinators. The Report from Sind only mentions that the vaccinators worked well.

Causes of decrease.

51. The cause of the decrease in the Southern, Northern, and also in the Dispensary returns, was that there were fewer vaccinators. There were fewer vaccinators in the Southern Circle, owing to the Sattara zilla having been transferred to the Central Circle from the Southern Circle, and the Kulladghee zilla from the Central to the Southern Circle. In the Northern Circle it was considered that there were too many vaccinators, and several vacancies were not filled up. As regards the Dispensary reduction, it is only apparent, and not all real, because some of the vaccinators' work which was in the **B** (Dispensary) return in last Report are now in the **A** (Vaccine Department) return.

Commendation of Superintendents.

52. I have much pleasure in recording my entire satisfaction with the conduct of the officers serving in the department. They have all done, I believe, their very best, to carry on their duties with energy, tact, and discretion. I have great difficulty

in commending any one as prominently deserving the notice of Government more than several others, but as it has for years back been the custom to do so, I would beg to commend Dr. Williams, Dr. Colah, and Dr. Blanc. Dr. Turnbull, for the short time he has been performing the duties of Superintendent of Vaccination, Central Circle, since his return from Europe, has been devoting himself with all his former energy and ability to the cause of vaccination. I think his office records were in the best order of any I inspected during the year.

Cost.

53. The total expenditure by the Vaccine Department in the year 1870-71 was Rs. 1,70,051. This is Rs. 33,850 more than in 1869-70. The increase was caused by—first, increased rank and pay of Superintendents, and second, an increased number of Vaccinators in the Municipal, Local Funds and Native States' Establishments.

The increased expenditure by Government was	.....	Rs.	17,512
Do. by Municipalities	.....	,,	3,660
Do. by Local Funds	.....	,,	3,914
Do. by Native States	.....	,,	8,764
	Total...		33,850

The following figures show the total cost in each establishment, and the cost of each successful vaccination. It is to be borne in mind that the whole administrative charges are debited to the Government establishment:—

	Total Cost.	Cost of each successful Vaccination.
	Rs.	Rs. a. p.
1*st.* Government	1,18,310	0 8 1
2*nd.* Municipal.....	10,354	0 6 5
3*rd.* Local Funds	11,258	0 3 2
4*th.* Native States	30,129	0 3 9
Total.....Rs.	1,70,051	0 6 0

It appears that the cost of each successful vaccination in the Government establishment was 8 annas and 1 pie, which is 1 anna and 5 pies more than in the preceding year. This is caused by—1st, there were 3,495 fewer operations; 2nd, there was a considerable sum drawn for arrears of travelling allowances to Superintendents which was incurred in the year preceding

the one under report, and again the rank and pay of several of the Superintendents have increased by the evolution of time having given them promotion. This latter kind of increase we cannot control, but it is not material to Government whether a Surgeon be paid in the Vaccine Department or in some other; though it makes the rate of cost for each vaccination more than if Assistant Surgeons held the appointments of Superintendents of Vaccination; not that I wish it to be so, I merely mention this as a cause of the increased rate of cost in the Government establishment. The rate of cost has also increased by 1 anna and 2 pies per successful vaccination in the Municipal establishment; I am of opinion that the rate of 6 annas and 5 pies for Municipalities is too high, and it will I hope be kept lower. The rate in the establishment of Local Funds and Native States is diminished by 1 anna in the former and 1 anna and 7 pies in the latter, so that the average for the whole Department is 6 annas; or 6 pies more than in my former report. I consider this average of ninepence for each successful vaccination cheap. I fear it will be more next year, but after that, when our changes are all introduced and in thorough working order, I hope we will be able to reduce the average cost of each successful vaccination a little. It is interesting to show the cost of each successful vaccination in each circle, with the number of vaccinators and the total successful vaccinated :—

Name of Circle.	Name of Superintendent.	Successfully Vaccinated.	Total Cost.	Average cost of each successful vaccination.	Number of Vaccinators.	Rank of Superintendent.
			Rs.			
1. Central	Dr. Turnbull	79,861	24,387	0 4 10	65	Assistant Surgeon over 10 years' service.
2. Southern ...	Mr. Raby	53,004	22,455	0 6 9	56	Do. under 10 years' do.
3. Western	Dr. Blanc	55,148	18,792	0 5 5	25	Surgeon under 15 years' service.
4. Northern ...	Dr. Colah	83,809	22,215	0 4 3	52	Uncovenanted, under 7 years' service.
5. Sind	Dr. Williams	74,094	23,833	0 5 2	32	Assistant Surgeon under 5 years' service.
6. Kattiawar ...	Drs. Shepherd and Blomfield.....	53,054	15,593	0 4 8	46	Surgeons above 15 years' service.
7. Rewa Kanta.	Mr. Cody.....	17,233	7,855	0 7 3	15	Assistant Surgeon under 5 years' service.
8. Presidency ...	Mr. Anunta Chundroba	8,510	8,145	0 15 3	11	Sub-Assistant Surgeon of 1st Class.
9. Kutch	Mr. Dorabjee Hormusjee	571	580	1 0 3	3	H. H. the Rao's Medical Officer.
10. Baroda	Mr. Rimington	21,774	7,085	0 5 2	23	Residency Surgeon.
	Total.....	447,058	150,940	.....	326	

It will be seen that vaccination is dearest in the Kutch and Presidency Circles, and cheapest in the Northern, Kattiawar, and Central Circles; but to make any real comparison the pay of the Superintendent should be excluded because it makes such a difference if there be a Surgeon in one Circle and an Assistant Surgeon in another. I trust that the cost in the Presidency Circle will be reduced, and I have no doubt it will be, if we get a compulsory Vaccination Act. In future reports I will show the cost of each successful vaccination in each Circle after excluding the pay of Superintendents.

J. PINKERTON, M.D., Surgeon,

Superintendent General of Vaccination,

Bombay Presidency.

Bombay, 29*th May* 1871.

EXTRACTS

FROM THE

REPORTS OF SUPERINTENDENTS OF CIRCLES.

CENTRAL CIRCLE.

Superintendent.—Assistant Surgeon P. S. TURNBULL, M.D.

Establishment.—31 Vaccinators under Government, 19 under Municipalities, 9 under Local Funds, 6 under Native States. Total 65 Vaccinators, and 12 Dispensaries.

Population 4,753,500. Total Cost Rs. 24,387. Average cost of each successful vaccination 4 annas and 10 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success, excluding those unknown.
			Increase.	Decrease.		
Government.....	1869-70.	55,959	.....	.....	53,405	97·
	1870-71.	54,367	.....	1,592	50,333	96·
Municipalities ...	1869-70.	7,975	.....	.....	6,978	94·4
	1870-71.	15,817	7,842	.....	13,880	94·4
Local Funds ...	1869-70.	1,902	.....	.....	1,561	85·4
	1870-71.	11,228	9,326	.....	10,399	96·8
Native States ...	1869-70.	2,635	.....	.....	2,508	95·5
	1870-71.	5,711	3,076	.....	5,240	92·7
Dispensaries.....	1869-70.	6,944	.....	.....	.....	88·4
	1870-71.	7,125	181	.....	6,147	90·9

Transfer of Kulladghee and Sattara.

On the 1st of April 1870, the collectorate of Sattara was transferred from the Southern to this Circle, and Kulladghee collectorate from the Central to Southern Circle. These arrangements necessitate a change in the totals shown in the table at the head of last year's annual report, so as to show a correct comparison of the work done by the establishments, during the past and the preceding year.

2. In the table at the head of this report, I have made the requisite alterations, and, as will be seen, there is an increase in all the establishments except the Government one. The total increase, excluding Dispensaries, is 18,933, and the principal cause of it is no doubt the increase of vaccinators. This however will not account for the whole of it. In the Government establishment, but for a few months only, there have been two additional vaccinators, whose total operations amount to 556, and yet the decrease under this head is 1,592. Again, in September last, an addition of six was made to the number of Local Funds vaccinators. The number of operations performed by these men is 6,517, and the increase shown in the above table, is 9,326. A like result is obtained, on thus comparing the work under the head of Municipalities' establishment. On the whole, the establishments have worked well during the past year, and their operations have been satisfactorily performed.

Causes of increase.

3. The continued and steady increase in the number of operations performed in this Circle, is, I think, due—1stly, to the more extended use of the Village Return of unprotected children, disclosing the whereabouts of subjects for operation; 2ndly, increased appreciation by the people of the protective influence of vaccination; 3rdly, increased interest taken in the work of the Department by the Civil Authorities; and 4thly, continued exertion on the part of the greater number of the vaccinators.

4. With regard to the first cause, I think I am right in giving it the first place in the list. The vaccinators one and all state that their labours are greatly lessened by it, and that they can perform a larger number of operations, and in a more satisfactory manner, than without such aid. Also that having it by them they can count with certainty on getting subjects for operation; a difficulty always experienced, formerly, by a vaccinator on visiting a village for the first time or on other occasions. These returns according to the amended form, are now rendered in a very complete state. I lately received such from the Patun Talooka of the Collectorate of Sattara, giving the names of no less than 12,696 *unprotected* children, showing that there is work in that Talooka (excluding children hereafter born) for the vaccinator for some years to come. A very considerable increase in the returns of this vaccinator has been the result, and I anticipate that it will yet be greater. An experience of nearly five years since the introduction of this form of return, I think, justifies me in recommending it for adoption as a Departmental one. Of course in a few years the birth registers will render these returns unnecessary, but at present there are so many unvaccinated children who were born before the new system of registration came into operation, that some such arrangement for procuring their names, as I refer to, is necessary.

5. With regard to the second cause, I have no doubt whatever that the people appreciate vaccination more than formerly. Having joined the Vaccination Department in the beginning of 1864, I can, from personal observation, speak with considerable confidence on this point.

6. As will be seen, the average number of operations performed in the year by the members of my Establishment is 1,340, whereas it was 1,522 in the previous year: showing a decrease of 182 operations per man. It must be remembered however, that during the past year, at least eight of the vaccinators were only half-timed, *i.e.* were engaged for six months only out of the 12, and that the vaccinators of Sattara who performed, in 1869-70, only 950 operations per man, were transferred to this Circle in place of those of Kulladghee, whose returns for that year showed an average of 1,850, or nearly double. I hope during the current year, to see the Sattara vaccinators in this respect, nearly on a par with the rest of the Central Circle.

Sex.

7. Of the total number of primary operations, 44,452 were on males, and 41,513 on females: giving a percentage of 51·7 and 48·3 respectively, or very nearly the same as for the preceding year.

Caste.

8. The following table exhibits the percentages of castes, as compared with the preceding year; and does not appear to call for any special remark:—

Years.	Christians.	Hindoos.	Mussulmans.	Parsees.	Other Castes.	Remarks.
1869-70 ...	·01	87·4	5·2	·0008	7·3	
1870-71 ...	·06	87·9	4·2	·005	7·6	

Age.

9. The percentage of operations on persons below and above one year of age, is respectively 30·7 and 69 3, showing a decrease of 7·5 per cent. in the former, when compared with 1869-70. This is, at least partly, accounted for by the extension of vaccination amongst tribes (such as the Bheels of Khandeish) hitherto unvisited.

Percentage of success.

10. The vaccine lymph in use throughout the year has been generally good, the vesicles well formed, and the resulting cicatrices of good size and depth, and foveated. Of course there have been exceptions, but they have not been many. The cause has either been sickness on the part of the vaccinator, or inexperience. The percentage of success recorded is 96·0, which is a little below last year. On the whole, I think, the operations of the Department in this Circle have been satisfactorily carried on, and quite as successfully as in previous years.

Lymph received from England.

11. In the month of January last, seven tubes were received from England, through the Superintendent General, containing vaccine lymph. With this lymph I operated on several selected children with great care, and the result was very satisfactory indeed. From the resulting vesicles, on the 8th day, twenty-three children were vaccinated by me and

General Nos. 207 and 240, my Office Karkoons, and every one of them resulted successfully, out of 109 punctures made, 104 resulted in vesicles more or less well developed. Numerous tubes were filled and distributed among my establishment and a large number of them are now using this lymph. It is satisfactory to think that the largest number of operations performed by a single individual, was by the man (General No. 244) in whose Talooka the English lymph was propagated, and that for three months he was using it, and no other.

Husband's tubes.

12. These tubes have been very largely made use of during the past year for transmitting lymph by post to vaccinators, and numerous applicants both in and beyond the Presidency of Bombay. The great majority of the vaccinators can now use them. They are not however made use of as an alternative for arm-to-arm vaccination, except on rare occasions, and when children with fresh lymph are not available.

Inoculation.

13. That this practice is not yet a thing of the past, I think I am right in affirming. No report of the inoculator carrying on his dangerous operations has been received during the past year, but while inspecting the work of the vaccinators in the Patun, Kurrar, Sattara, and Jowlee Talookas of the Sattara collectorate, I saw very many children who had been inoculated. In the village of Choreh of the Kurrar Talooka, a list of the names of 22 children was made. They had been inoculated in January 1870 by one Janoo Dungur, an inhabitant of Mandweh, Sattara talook. In the Jowlee talook there are inoculated children in every village: most of them having been operated on two or three years ago. The village officials did not see anything wrong in it, and in many instances have had their own children inoculated. The Mamlutdar of this Talooka, though he has been nearly five years in that district, knew nothing about it, and did not know there was such a person as an inoculator in his district. I have brought the matter to the notice of the Collector, and no doubt steps will be taken to prevent any thing of the kind in future.

Small-pox.

14. Small-pox during the year 1870 did not prevail anywhere in an epidemic form, and the return given below shows that only 3,621 cases occurred in a population of over four millions, and of these 321 are reported to have died. I do not submit these returns under the impression that they are absolutely correct, or even a very near approximation to the truth. However, they are made up from registers of small-pox kept in nearly every village, and as both Dr. Gordon and myself have taken frequent opportunities to test them and found them fairly correct, I give them such as they are. Many of those given as occurring in persons previously vaccinated, occurred probably in persons unsuccessfully operated on. Of the total 8·8 per cent died, a very low death rate indeed; while of those who had been previously vaccinated, 12·5 are reported to have died. There must be some serious mistake here, partly explained perhaps on the above supposition.

Collectorate.	Total number of cases of Small-pox during the year 1870.	Of the Total number were Vaccinated		Of the total who died from Small-pox were vaccinated.		Of the total number unprotected.	Of those unprotected died of Small-pox.	Total deaths from Small-pox out of total number of cases.
		In Infancy.	In after life.	In Infancy.	In after life.			
Poona.....	344	1	1	1	1	342	22	24
Ahmednuggur	366	4	9	1	...	353	10	11
Nassick	260	...	7	...	...	253	20	20
Khandeish	1,616	23	60	1	18	1,533	161	180
Sattara	43	...	...	...	...	43	1	1
Sholapoor	992	21	34	8	...	937	77	85
Total 1870.....	3,621	49	111	11	19	3,461	291	321
Total 1869.....	21,943	330	1,093	14	113	20,520	2,530	2,657

Conduct of the Vaccinators.

15. The conduct of the vaccinators generally has been satisfactory. One man of the Local Funds establishment was dismissed for inefficiency and disobedience. Of the Government establishment it has not been necessary to take serious notice of the conduct of any one: nothing more than a small fine or warning. No casualties took place during the year.

Notice of the Vaccinators' visits to Villages.

16. In accordance with Government Resolution No. 1345, dated 7th June 1869, I have had printed a few copies of a notice to be sent to Village Officers by vaccinators, two or three days before visiting a village for the first time. It merely states the date and hour of the intended visit, asks their assistance in the collection of children for operation, and requests they will acknowledge receipt of the notice by their signature. I anticipate much good will result from the use of this notice as it will prevent Village Officers from making feigned excuses for absence. Koolkurnees in a great many cases live in other than their own villages, and are, consequently, very often absent when the vaccinator is at work. This notice, timely given, will in a great measure remedy this.

Local Funds Establishment.

17. This establishment now consists of nine members, six having been added during the past year. They have worked well; three in Poona and six in Khandeish Collectorate.

Municipalities Establishment.

18. Except the addition of one vaccinator for several towns in the Kher Talooka of the Poona Collectorate, the number of Municipalities' vaccinators remains the same as the preceding year.

Native Chiefs' Establishment.

19. The work of some of these men is not carried on in a satisfactory manner, those of Jutt and Atpadee especially. The arrangements made during my visit to Jutt, will, I think, lead to an improvement in the work in that State. With regard to Atpadee, I have recommended the dismissal of the vaccinator, as well as several new arrangements for the improvement of vaccination there. I trust that all the recommendations will be carried out. The decrease in the returns of these vaccinators is entirely due to the vaccinator of the Atpadee Chief being absent without leave for several months.

Tour.

20. An account of the tour made by Dr. Gordon will be found in his report, hereto attached. I assumed charge (on return from England) on the 1st December. Thereafter I proceeded to the Sholapoor District, and inspected during that month the Barsee dispensary, the work of the vaccinator employed by the Barsee Municipality, and of General Nos. 144 and 244 in the Marole Talooka. With the Barsee vaccinator's work I was not pleased and I had occasion to renew his lymph. That of General No. 144 (old work) was unsatisfactory, but that of General No. 244 was all that could be desired, whether we regard it in point of quantity, quality or the correctness of his records. Having minutely inspected work in the Marole talooka, I travelled to Sholapoor and there inspected the Dispensary, and the work of the Station and Municipality's vaccinators. All these were satisfactory. I also inspected the recent and fresh work of General No. 144, in the Sholapoor talooka, and found it satisfactory; the lymph good, vesicles well developed, and the cicatrices foveated. He was warned in writing regarding the carelessness with which he had performed his work in the Marole talooka. I next proceeded to Akulkote. Like most of the Native States' vaccinators, his work was not very satisfactory. In some villages it was fairly so. Major Baumgartner, the Political Superintendent, takes considerable interest in vaccination, as well as other matters, and I hope, with his assistance, to improve matters in the Akulkote State. From Akulkote I returned, *viâ* Sholapoor, to the Marole talooka, and at Mohul tested the lymph received from England, the satisfactory result of which is recorded in para. 11 of this report. Punderpoor and its Dispensary and vaccinator were next visited. The amount of vaccine work done in this town has not been great, but in point of quality it was satisfactory. The Municipal Commissioners take no interest in vaccination whatever, and the Patels do not render any assistance. One of the latter actually refused to give me assistance. Small-pox was then prevailing in the town, but the Sub-Assistant Surgeon in charge of the Dispensary and Health Officer of the place could not get any information from the authorities (Native) regarding it, and he reported to me that recommendations made by him were generally disregarded by the Municipal Commissioners. From the arrangments made during my visit I trust some good will result, but owing to want of interest taken in the work of this Department by the Native Officials, I am not sanguine. From Punderpoor I travelled, *viâ* Sangola (where I inspected the work of the Municipal vaccinator and found it correct and good) to Jutt, where I met Dr. Pinkerton, the Superintendent General, who examined my

office records, and gave me the benefit of his experience and instructions regarding the general working of the Department. We inspected the work of the Dufflay Sahib's vaccinator in several villages, and found him so deficient in his professional education, &c., that I was obliged to ask the Dufflay Sahib to allow him to accompany me, in order that he might be instructed for one month in my office. This was done, and I think he will now perform his work more satisfactorily, though I must say I am not sanguine of his making a good vaccinator. From Jutt I proceeded in company with Dr. Pinkerton through the Atpadee State, and found the Punt Sahib's vaccinator was absent without leave. I, in company with Dr. Pinkerton, examined his old work, and found it (as regards his records at least) very unsatisfactory. Names were called over, but many persons were either absent or they did not exist. I have since recommended his dismissal. From Atpadee, I proceeded to Mainee, in the Khuttao talooka of the Sattara collectorate. During the month of March the work of the Municipal vaccinators of the Khuttao and Khanapoor talookas were visited, and their work inspected in a number of villages, and both were found to have performed their duties satisfactorily. I was dissatisfied with the amount of it only. General No. 88, employed in the Tasgaon talooka, was next visited, and the result of my inspection was very satisfactory indeed. He is a man of tact, and a good vaccinator, and would, I think, make a good Assistant Superintendent. From Tasgaon I crossed the Krishna and inspected the work of Shreedur Atmaram, employed by several Municipalities in the Walwa talooka. I was far from pleased with his work. Though he has been employed as a vaccinator for 7 years only, yet he is 52 years of age. He will never make a good vaccinator, and I am only waiting till the new Departmental arrangements come into operation, to see what arrangements can be made for the future. From Walwa I proceeded through the Patun and Kurrar talookas, inspecting the work of the Municipal vaccinator employed in the latter, and that of General No. 243 in the former. Both were satisfactory. Also the Dispensary at Kurrar was reported on. At Kurrar, I met Mr. Dhunjibhoy Cowasjee, the District Deputy Collector, who promised me every assistance in furthering vaccination. His energy and the interest he has always taken in the work of this Department are too well known to need any commendation from me. I left the Kurrar talooka and visited several villages in those of Koregaon, and Sattara; the work respectively, of a Municipal vaccinator, and General No. 26, lately the Civil Surgeon's vaccinator. The former was fairly satisfactory, and the latter very much so. Here (Sattara) my tour ended. During the year, Dr. Gordon and myself have travelled 1,637 miles, visited 237 villages, seen the work of 31 vaccinators and three Dispensaries, and inspected the arms of 20,952 vaccinated and unvaccinated children; which, considering the difficulties met with in travelling in some parts of the districts inspected, I hope will not be thought a small amount of work.

21. Though I have now been seven years in the Vaccination Department, and have inspected upwards of 80,000 children, I have never seen a case in which Syphilis had been communicated through vaccination.

Report by Dr. Gordon *for the period he was Acting Superintendent of Vaccination in the Central Circle in* 1870-71.

General Progress.

The general progress of vaccination has been on the whole satisfactory. From what I have learned in my intercourse with the people, and from the desire expressed by the greater number to have their children protected, I am confident that the benefits of vaccination are becoming every year more perceptible to the natives. It is so at least in the districts, but in many large towns there still remains much to be done.

2. During last rains Dr. Blanc, assisted by the Sub-Assistant Surgeon in charge of the Dispensary, and myself, carried on animal vaccination at Poona. Its introduction did not meet with the support of the public, and our efforts to obtain heifers were by many strenuously opposed. On each appointed day a few children only could be collected, and these were very reluctantly brought by the parents. Since October the work has been carried on by Mr. Balcrishna Chintoba, Sub-Assistant Surgeon, but the successful operations compared with the unsuccessful have been very few indeed.

3. In September many of the vaccinators reported that their lymph had deteriorated in consequence of the heavy and continuous rains, and I regret to state that some of the supplies of English lymph introduced last season have been lost. Lymph was at once supplied to all vaccinators from whom I had received reports.

4. Generally the vaccinators have worked well. I have imposed fines in a few instances for disobedience of orders, and for working with bad lymph. Assistant Vaccinator Balcrishna Rajaram, General No. 207, who has been, for the last six years, employed in the Superintendent's Office as a Carkoon, was tried by the Magistrate at Poona, on a charge of attempting to extort money from other vaccinators, and from candidates. It could not be proved that he had ever received any money as a bribe, and the evidence was not sufficient to warrant conviction. I considered him an untrustworthy person to have in the office, and sent him to work in the Waie talooka. General No. 37 was employed in the office in his place. Veshmenath Rago, Local Fund Vaccinator, Poona, was dismissed on account of carelessness, negligence, and utter disregard of orders.

Small-pox.

5. The only report of small-pox received was from the Newassee talooka, to which place a vaccinator was ordered to proceed. Notwithstanding this the disease may have prevailed to some extent in other talookas, but the returns at the end of the year will tell. I must here make a few remarks with reference to the statistics of small-pox given in my report for 1869-70. I have paid great attention to this subject, and examined the small-pox registers of many of the villages I have visited. From what I have learned I must again state that I believe these registers are very fair returns of the actual number of cases which have occurred. Perfection and perfect correctness cannot be expected, when we consider that these registers are kept by unprofessional men. At para. 16 of my Report for 1869-70 I stated that small-pox had been epidemic in only two talookas,

but that over the whole Circle 21,943 cases had occurred, of these 93·5 per cent. were unprotected and 6·5 had been previously vaccinated. With reference to this, the Inspector General in his letter No. 2071 of 27th July 1870, handing up the Superintendent General's Report for 1869-70 to Government, says in para. 12, "I would ask, how is it possible that any population in the Presidency can have 93 per cent. of its number unvaccinated?" The population of the Central Circle is over 4,000,000, and among this population during 1869 there occurred 21,943 cases of small-pox, which is equal to about 5·3 per mille of population. I stated that 93·5 per cent. of the *cases* of small-pox were unprotected, but made no allusion to the percentage of unprotected among the population as a whole. I am not aware of the system pursued in the other Circles to obtain statistics of small-pox, but as the Inspector General has stated that the whole of the figures in the earlier portion of para. 23 of the Superintendent General's report (which is a quotation from para. 16 of my report) are untrustworthy, I respectfully submit that it remains to be considered, whether these registers are worth the trouble bestowed on their preparation and examination, and the unavoidable expense entailed in transmitting the returns from the Mamlutdars to the Superintendent, or whether some new method should not be devised, to ascertain more accurately the number of cases of small-pox occurring in each village. The Inspector General further states that it would be interesting if further particulars of the means adopted to protect the people of the two talookas specially named were stated. With reference to the Indee talooka, I stated as follows in the resumé of my tour for 1869, "In the Western part of the Indee talooka I saw many cases of confluent small-pox, and it was obvious on looking at the disfigured countenances of the children collected for my inspection, that the disease had raged in an epidemic form not long previously. General No. 244 was ordered to work towards this part of the talooka, and the result was that during the month of June he vaccinated 795 children." Let it be remembered that previous to my going there no report with reference to the outbreak had been made to either myself or the vaccinator. As to Shindghee I heard through the Superintendent of Police that the disease had raged there epidemically, but this was only after the outbreak had all but subsided. A vaccinator was sent to the talooka at once.

Tour.

6. On the 1st of April I was in the Nuggur talooka where I examined the work of General Nos. 237, 289, and the Municipal Vaccinator of Ahmednuggur. Many of the cicatrices were small on account of too many children having been vaccinated from one vaccinifer. I then went through Parnair to Seroor, where I examined the work of Veshmenath Rago, Local Fund vaccinator. Both work and lymph were unsatisfactory, and he was sent to Ahmednuggur to procure a fresh supply of lymph, and ordered to work gradually back to his own talooka. In the Kheir, Mawul, and Haveilly talookas I inspected the work and lymph of General Nos. 23 and 40, I had no fault to find with either. During the rains I examined the lymph of the two Municipal vaccinators and that of the Civil Hospital vaccinator at Poona. The two former were working with very inferior lymph,

and as there was a ready supply of animal lymph at hand, this was at once remedied. On the 8th of October I went to the Poorundhur talooka and inspected the work of General No. 37. The cicatrices were generally all large and typical, and his work had been performed with great care. I also saw some work here performed by General No. 207. I next travelled through the Bimthurry talooka where I saw the work of Gungadur Rajaram, Local Fund vaccinator, and the work of the Municipal vaccinator at Baramuttee. The work of both was satisfactory and the lymph was good. In the Indapoor talooka I examined the work of Govind Khunderao, Local Fund vaccinator. His work was the worst I have yet inspected. More than half the vaccinations performed by him since May were utterly worthless. His lymph had deteriorated so much that the resulting vesicles were all spurious; he was directed to abandon the lymph he was using, and go to the Baramuttee vaccinator to see proper vaccine vesicles and get a supply of fresh lymph. He was fined and warned to be more careful in future. At Indapoor I inspected the Dispensary and found everything very satisfactory. I next went to Kurmulla where I inspected the work and lymph of General No. 301. Generally the cicatrices were indifferent, and many of the vaccinations had been performed very carelessly. The old work of General No. 223, was also inspected. The cicatrices were all deep and pitted. From Kurmulla I passed through Kurjut, where I saw the old work of General No. 289. It was very satisfactory. On the 1st December I gave over charge to Dr. Turnbull. During the four travelling months since the 1st April I have examined 4,585 vaccinated children, visited 116 villages and travelled 697 miles. I have inspected the work of 9 Government, 3 Local Fund, and 4 Municipal vaccinators, the vaccinators at the Civil Hospital, Poona, and two Dispensaries.

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon J. RABY.

Establishment.—25 Vaccinators under Government, 7 under Municipalities, 7 under Local Funds, 20 under Native Chiefs, and 10 Dispensaries.

Population of Circle, 4,000,000. Total cost Rs. 22,455. Average cost of each successful vaccination, 6 annas and 9 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully vaccinated.	Percentage of success, excluding those unknown.
			Increase.	Decrease.		
Government	1869-70	28,499	.....	.....	27,178	97·1
	1870-71	26,306	.....	2,193	24,673	95·8
Municipalities	1869-70	9,368	.....	.....	8,653	94·8
	1870-71	3,535	.....	5,833	3,243	93·0
Local Funds	1869-70	3,843	.....	.....	3,624	97·3
	1870-71	6,717	2,874	.....	6,336	96·5
Native Chiefs	1869-70	22,572	.....	.....	21,715	97·3
	1870-71	19,938	.....	2,634	18,752	95·0
Dispensaries	1869-70	3,577	.....	.....	.....	91·0
	1870-71	2,864	.....	713	2,316	87·0

Progress of vaccination.

The progress of vaccination in this Circle throughout the year has been favourable on the whole, though not altogether so satisfactory as I should have desired. In the report which I have now the honour to submit the actual numbers compared with those of last year are not so great, but this is adequately accounted for by the Sattara zillah having been exchanged for the Kulladghee collectorate. The total number of vaccinations performed during the year 1870-71, is 59,360, of successfully vaccinated 55,320, giving a percentage of success of 95·2. There is thus exhibited a decrease of 8,499 which is accounted for principally by the above-mentioned exchange of zillahs. In the Sattara collectorate during 1869-70 there were 16 vaccinators, inclusive of the four maintained by Native Chiefs, and two Dispensaries: whereas in the Kulladghee collectorate during the year there have been only 8 vaccinators, and one Dispensary. But as a counterpoise to this the returns of the station vaccinators under Civil Surgeons are for the first time included in the returns of this Circle.

Government Establishment.

2. The total vaccinations of the Government establishment are 26,306 and of successfully vaccinated 24,673, giving a percentage of success of 95·8. There is thus exhibited a decrease of 2,193. This I attribute in great measure to the following:—The services of two of the Sattara vaccinators who were transferred along with the zillah,

were lost for some months by reason of their unwillingness to leave that zillah, and the unavoidable correspondence and consequent delay that ensued, so that it was late in August before these men actually commenced work. It is true they did work in the Sattara collectorate during this time, but their returns for this period will be incorporated with those of the Superintendent of Vaccination of the Central Circle. Another point of no small importance to account for the diminished work, and especially the smallness of the returns from these men was the fact of their being unacquainted with the Canarese language which is in use in the zillah to which they were removed. This under the circumstances of the transference appears to have been unavoidable, and the Superintendent General of Vaccination informs me that he purposes transferring these men from this Circle as soon as practicable. They are very dissatisfied with their positions, and are constantly petitioning to be removed to Marathi-speaking localities, but I am unable to comply with their requests, because I have already vaccinators acquainted only with Marathi in the Marathi districts. Sickness among the vaccinators has been another cause of the decrease, and one vaccinator, Babajee Gungaram, General No. 233, was absent for three months without leave. The smallness of the work performed by two of these vaccinators, Babajee Gungaram and Sadasheo Mahadoo, is sufficient alone to account for the apparent decrease, for if we compare the work performed by them in 1869-70, viz. 3,978
with that for the present year, viz..... 1,002

the difference will be observed to be 2,976

Causes of Decrease.

3. In the Native Chiefs' establishment the number vaccinated is 19,938 ; and of successful cases 18,752, or a percentage of 95·0. This also shows a decrease, but the decrease is apparent only, because if the numbers vaccinated by the four Chiefs' vaccinators of the Sattara collectorate be deducted from the total of last year there is really an increase of 752. During the year however there has been a vaccinator appointed for the Savanore State, but he has only recently commenced work (for he was only appointed in January last), and his returns being only 83, scarcely affect the total. The vaccinator of Echulkurunjee died of cholera during the year, and a break of over two months occurred before the work was again commenced. Some improvement for the more effectual vaccination of the mass of the population in the Native States is urgently required, and the recommendations that I have made to the Political Agent regarding this will be found in the course of my tour ; they are chiefly these,—1st, the introduction of registers of vaccination ; 2nd, the issuing of a notice about vaccination in the different Petas and States ; 3rd, the closer supervision by the Kharbarrees of the working of the vaccinators ; 4th, increased pay to the vaccinators ; and 5th, directing the vaccinators to work more regularly and systematically from village to village, instead of remaining for several months of the year always at the

Native Chiefs' Establishment.

Suggestions for Improving Vaccination in Native States.

centre town. Many of the outlying districts are never visited at all by the vaccinator, and when this is brought to his notice he generally pleads the smallness of his pay as an excuse. I am not in all instances prepared to deny but what it is a valid one, and some of the Chiefs appear unwilling to increase the pay of their vaccinators.

Municipalities.

4. Under the head of Municipalities a considerable decrease is exhibited, partially accounted for by the reasons given above, viz. the transference of the Sattara zillah to the Central Circle, and the consequently diminished number of Municipal vaccinators in this Circle, and by falling off of the work of the Hooblee and Gudduck Municipal vaccinators. The Gudduck vaccinator is supposed to work throughout the Dumbul Talooka, but no regular peon is allowed him and he complains of his inability to get many persons collected for vaccine operations. I represented this to Mr. Robertson, the Collector of Dharwar, who usually takes much interest in vaccination, but he informed me that if a peon were allowed to accompany the vaccinator occasionally it would be sufficient. I again pointed out to the Collector the necessity of a permanent peon for the purpose of collecting cases and otherwise assisting the vaccinator, especially if he be expected to work in out-villages, but I have since received no reply. The Hooble Municipal vaccinator is likewise not allowed a peon. The Sircy Municipality have thought fit to discontinue the services of a vaccinator.

Dispensaries.

5. There is also a decrease in the dispensary vaccinations throughout the year under review, and though there is one Dispensary less this year than last, this does not affect the numbers, as all the dispensaries have a diminished number of operations. The reason of this is, I think, what I gave last year, at least I know of no other sufficient to explain it—viz. that the Hospital Assistants only vaccinate, as a rule, those who attend voluntarily at the dispensary, and there is no peon attached to the dispensary for the purpose of collecting children. Some of the Hospital assistants report their inability to go into the town to vaccinate on account of being as they term it "single-handed," and having other work to engage their attention, though I would beg to suggest that they be directed to vaccinate at any convenient place in the town at least once a week, and I do not see why the Patel or Koolkurnee should not arrange for having children collected for vaccination. In the case, however, of the Yellapoor Hospital Assistant, there are other, and, I consider, ample—reasons to account for the decrease in that dispensary. Last year the Hospital Assistant addressed the Collector pointing out the difficulties he met with in vaccinating, as the natives refused to allow him to take lymph from their children's arms. In reply the Collector informed him that he was to use no pressure towards the people in getting them to give lymph, and also requested me so to direct him. Since then vaccination has been at a stand-still there.

Local Funds.

6. The increase in the Local Fund vaccinations during the past year is merely due to the vaccinators being at work the whole of the year. One extra was entertained in January last in the North

Canara collectorate. Small-pox was epidemic in the Moondgode Petah of that zillah, and though I sent Eshwant Ferrogojee, the Bankapore vaccinator there, at my representation Mr. Elphinstone, as a special case, sanctioned the entertainment of a vaccinator for this district. In parts of the Dharwar Collectorate still much opposition to the spread of vaccination exists—especially is this the case in the Roan, Ranebednore, Dumbul, and Kurudjee Talookas. Frequent complaints are received of the difficulty in procuring subjects for operation, and still greater difficulty in persuading the people to permit lymph to be taken from the vesicles. Unless a vaccinator is allowed to take lymph freely, of course his work must be very much diminished, if not altogether stopped. Regarding the Roan vaccinator, however, I have received so many complaints of his laziness and irregular way of working that unless he speedily improves I shall recommend his dismissal. I have also had occasion to reprimand and fine, several times, the Karudjee and Ranebednore vaccinators; these men it will also be necessary to replace unless they evince better conduct and pay more attention to the orders given them. In the Kulladghee District also much apathy and indifference prevails amongst the natives generally, and the Patels and Koolkurnees do not give that assistance to the vaccinator which they are expected to give.

Inspection of Vaccinations.

7. From the summary of my inspection of the villages' table the result of the examination of the vaccinators' work will be seen. I have met with one instance of false entry by a peon whom the vaccinator sent to vaccinate for him, for which he has been punished. There were two other questionable cases, one in the work of the Bagulkote Municipal vaccinator, and the other in that of the Roan Local Fund vaccinator. I could not satisfactorily prove the two latter cases, as the persons were alleged to have gone to other places, and the statements of the village officers were so conflicting that no reliance could be given them. As far, however, as successful cases go, the numbers, I think, must be viewed with some qualification. They are I believe not so high as the vaccinators as a body state them, and in some instances of late I have found that the vaccinators admit their having written cases down as successful which they or their peons had not seen after the operations. These men I have informed that, if I again meet with such cases in their returns, more serious notice will be taken of their misconduct than the infliction of fines. For such cases a column is provided, and entering cases unseen elsewhere is inexcusable.

New form for Returns of Vaccination.

8. Regarding the new form brought into use at the commencement of the year, although printed, and although circulars have been issued to the vaccinators explaining what re-vaccination is, many of them seem to have a very indistinct idea of what is really meant. Some have written a primary case operated on twice as a re-vaccination, and much extra labour has been thrown on this office by having to return for correction so many of the vaccinators' returns, and after all they have been found to have been erroneously altered. As far as numbers go, the returns are on the whole probably correct

enough, but I cannot place much faith on the re-vaccination returns. In fact I think many of them might be considered as primary vaccinations.

Testing returns.

9. In this Circle the vaccinators' returns—at least all the Government vaccinations—are verified through the Superintendents of Police in the following manner. A copy of the summary of each vaccinator's return is sent monthly to the Superintendent of Police, who forwards an account of the numbers vaccinated in every village to the Foujdar of the talooka for verification. The Foujdar reports to the Superintendent of Police, who in turn transmits it on to this office with any remarks he may have to make. By this means it is almost impossible, except by the connivance of the Police and Village Officers, for a vaccinator to falsify his returns for any length of time,—for he is certain to be discovered sooner or later. The Superintendent of Police at Dharwar, Mr. Giertzen, found that Malharee Tummajee had not vaccinated in several villages, as was represented by his returns, and on further confirmation this man was dismissed the service. He absconded, otherwise he would have been tried before the Magistrate of the district.

Changes among the Vaccinators.

10. The changes among the vaccinators have been rather frequent during the year. One Government and one Native Chief's vaccinator died of cholera. The former vaccinator's place was immediately filled up by a substitute, but the latter was vacant for more than three months. It is very difficult at times to procure the services of a good man. Many apply, but the Superintendent can know little or nothing of most of them, and many of those whom he does see are not at all fitted for the appointment for which they apply. I do not wish to imply that vaccinators cannot be obtained, but under the present arrangements I contend that men are often obtained and put in positions for which their qualifications ill fit them, for it is impossible, except at great loss of time and diminished work, for a Superintendent to see every candidate before he is appointed ; but were a candidate attached to the office on a small monthly salary to learn his work, he would not only be generally ready to be sent wherever the services of a vaccinator might be urgently required, but it would be a means of introducing into the Department a better trained class of vaccinators, men that would understand something of the correctness that is required of them. Babajee Gungaram, General No. 233, was absent, as stated, for 3 months without leave. He forfeited pay. His excuse was sickness. There has also been a good deal of sickness amongst the vaccinators. This was consequently another cause of interruption to work, for in all cases a substitute could not at once be provided.

Lymph.

11. The lymph in use throughout the Circle has been reported good, but in the course of my tour I have met with some exceptions. In January last I received some tubes from the Superintendent General of Vaccination sent from England. A part of them I sent to General No. 332 for trial, with the intention of subsequently seeing the result personally, but they failed, through, I am inclined to think, the ignorance of the vaccinator in the use of

tubes, as the remainder tried at Beejapoor proved successful, producing very good vesicles, and from these and other *removes* I renewed the lymph of several other vaccinators. In some villages I have met with very indifferent lymph and resulting cicatrices, while in others, vaccinated by the same vaccinator, as equally good work has been seen. I believe the reason of it is, that on first introducing lymph into a village and, an indifferent vesicle resulting, the vaccinator propagates from this source instead of giving himself the trouble to bring a fresh supply from another village.

Animal Vaccination.

12. In November last I endeavoured to introduce Animal Vaccination into this Circle, and succeeded in inoculating a heifer, with lymph brought with me from Bombay, but on vaccinating children it failed. Several other inoculations from the same source failed to produce vesicles on the human subject. I attribute the failure in the human subject to the vesicles not having risen particularly well on the heifer.

Vaccinators sometimes take lymph from too ripe vesicles.

13. Occasionally a vaccinator vaccinates from too ripe vesicles, when inflammatory products are mixed with the vaccine virus; the vesicles are then large, and give a large supply of impure lymph, which produces bad vesicles and bad vaccination.

Lymph supplied to all applicants for it.

Lymph has been supplied in tubes to dispensaries, civil surgeons, vaccinators and all others who have applied for it. It is difficult at times to furnish lymph in well filled tubes on account of the inability of many of the vaccinators to fill them properly. I have shown the vaccinators the mode of filling tubes, but they do not appear to become very skilful in their use. When we have a Native Assistant Superintendent in each zillah many of the difficulties in this way will diminish, and the supervision will be closer, which means not only more work but better work also, and this latter is certainly desirable.

Small-Pox.

14. During the year I addressed the different Collectors requesting that returns of small-pox might be forwarded to me monthly or quarterly, but up to the present time I regret to say I have received none: but I have been informed that orders have been issued to furnish them in future. Small-pox has been prevalent in parts of the Kulladghee, Canara, Dharwar, and Belgaum collectorates. In the Chundgarh district of the Belgaum collectorate it was epidemic at the commencement of the year. The talooka vaccinator was ordered there, and I visited that part in November, but I did not hear of many deaths having occurred. In the Canara zillah small-pox was reported by Mr. Elphinstone to be prevailing, and in a very fatal form in the Moondgode Petah. I at once directed the Bankapoor vaccinator to proceed there, and General No. 334, recently entertained, was sent to Bankapoor, and directed to work towards the Moondgode district, but both of these men were very soon obliged to relinquish work on account of sickness. Fever was very rife in both these talookas during the year, and I had no little difficulty in getting a vaccinator to go there. On my representing to

the Collector of Canara the desirability of appointing a special vaccinator for the Moondgode district as a temporary measure, he sanctioned early in January the appointment of a vaccinator to be paid out of Local Funds, but even then I could not for some time secure the services of a vaccinator. I had a candidate at the time in the office, but on my directing him to proceed there he refused on account of the insalubrity of that part; so I was obliged to appoint a man who had been before acting as a substitute in the Canara zillah, though he is somewhat over the regulated age. In many villages where small-pox is prevalent the Natives do not bring forward their children as readily as might be supposed. I have myself witnessed the reluctance of Natives to be vaccinated under these circumstances; this is especially the case in a part of the Canara collectorate, and to some extent for the following reason. Some years ago it was a common belief and disseminated by a civil surgeon of that district (a copy of whose letter was not long since sent me by the Collector) that when small-pox was epidemic in a place, it was useless, not to say noxious, vaccinating in that place, but that vaccination should be vigorously carried on in surrounding villages, so as to place a barrier of protected persons between the infected and other localities. The efficiency of this plan only seems to be ingrained into the minds of the Natives of those parts (especially about Sircy), so that the vaccination of the people during periods of small-pox is attended with no little difficulty. However desirable and advisable the latter proceeding may be, the former, I am of opinion, should not be lost sight of. It is true vaccination may get into disfavour somewhat in some instances from the fact of its failing to afford protection to those operated on, who may already be incubating the variolous poison, but when it is a question if the person vaccinated has or has not contracted the disease, it is preferable to run the risk than not vaccinate at all, as in the latter proceeding no security can be possible, whereas under the former there is the reasonable chance of the person being vaccinated before he has contracted the poison of small-pox. One point also is the aversion some Natives exhibit to allow lymph to be taken. At one village that I visited for this purpose, the parents had actually run off with their children to the jungle, having heard of the reason of my visit.

Registers.

15. Registers of vaccination are now kept in all villages of the collectorates of this Circle, at least orders have been issued by the Collectors for such to be kept, and in most of the villages I have inspected they are fairly kept up. Some few instances I have met with where they have not been, but I have always brought it to the notice of the Collector. These registers will, I believe, prove an excellent aid to vaccination, because the Patels and Koolkurnees will now see that they are expected to assist the vaccinator. In the Native States these registers have not yet been introduced; I have addressed Colonel Anderson on the subject of their speedy introduction into the Kolapoor State, and he informs me that orders will be issued for them to be kept. Major Westropp, the Assistant Political Agent, is also endeavouring to prevail on the Chiefs of the Southern Maratha States to introduce these registers in their villages. In February last I also addressed

Major Westropp pointing out the desirability of issuing zahirnamas in each of the States. I also sent him a copy of one in use in the Central Circle, and which will shortly be issued in this Circle too. He approved of the suggestion, and gave the necessary directions to the Kharbarees of Moodhol and Meeruj for their issue as soon as practicable, and likewise addressed the different Chiefs respecting them. The Superintendent of Vaccination of the Central Circle has lately forwarded to me a return in use in that Circle of all the "unprotected" in villages. This may probably be of some benefit to a vaccinator, and I purpose as soon as practicable requesting the Collectors to have similar returns compiled for each talooka.

Tour.

16. I commenced this season's tour in November on my return from Bombay, by inspecting the work of substitute Hurry Kapalaswer in the Chundgurrh Petah of the Belgaum District, where small-pox had been prevalent at the early part of the year under review. I found the work satisfactory, and the Patel stated nearly all the children in the town had been vaccinated. At Tamboolwaree I also inspected cases, and saw a candidate vaccinate before me. I mention this for the following reason. On receiving the confirmation return from the Superintendent of Police for the month of November the Patel and Koolkurnee of this village stated that the vaccinator had not vaccinated any cases during that month, and similar statements were made by the officers of some other villages. I actually personally saw, as I have stated, recently vaccinated cases there on the 14th of the month, and witnessed a candidate operate in my presence. I have duly represented this to the Collector, who is investigating the case, and I quote this as an example of the carelessness of some village officers, and how little reliance can be placed on their assertions with reference to the vaccinated cases in their villages. Village officials have not yet, as a rule, been accustomed to regard the work of vaccination as any duty of their own, nor have they been directed (as is the case in some Circles of Vaccination) to attend the vaccinator in his rounds of a village on his operating days. Mr. Grey, however, has very recently given orders to this effect, and I have no doubt an improved state of affairs will henceforth be inaugurated. I am sanguine that these returns of "unprotected" will enable a vaccinator to work much more easily and smoothly than he hitherto could do. I then travelled to the Beedee talooka, where I cannot say that vaccination is making as much progress as it should do; principally too I think this is attributable to the inactivity of the vaccinator and indifference of the people. I met the Mamlutdar at the town of Beedee, where there has always been much opposition to vaccination, and he promised his active aid in future. The lymph in use was good. I next travelled *viâ* Kittoor to Hongul and Nurgoond. At Hongul I found several false entries in the vaccinator's book. I had the parents or relatives of the supposed vaccinated cases brought before me, and they stated that the vaccinator or rather his peon had told them he had no lymph then, but would return the following week, which he neglected to do. I had occasion to punish this vaccinator, Satapa Govindapa, last year, but as these vaccinations were done previous to that, and as it seems the vaccinator was told by a former Superintendent that he

might permit his peon to operate, a fine only was inflicted in this instance. He has certainly improved since last year, and bids fair to be more careful for the future. At Nurgoond and surrounding villages very few vaccinations have been done of late owing to the interruption of vaccination in the Noolgoond talooka by the dismissal of the late vaccinator for falsification. At Christmas I was in the Badamee talooka and inspected the old work of Swamyrao Rungoo. He had been sick, and consequently had lost his lymph, which was subsequently renewed from vaccinator Jairam Krishna. His work, judged of by cicatrices, was good, and his registers and books neatly and well kept. On the 10th January I went into Kulladghee to meet the Superintendent General of Vaccination, who, after inspecting my office, &c., examined with me the work of the Kulladghee Municipal vaccinator, with which I was satisfied, as I believe was also the Superintendent General. This man had excellent lymph. The Superintendent General of Vaccination next accompanied me to Bagulkote, where we examined the work of the Municipal and Government vaccinators, as also that of the dispensary. Both vaccinators' work was on the whole satisfactory. By direction of the Superintendent General the Hospital Assistant in charge of the dispensary was directed to discontinue vaccinating at the dispensary because of there being insufficient children to ensure good work, and the fact of there being a Municipal vaccinator, who will henceforth vaccinate in a greater number of villages than he has hitherto done. The Kulladghee vaccinator has almost solely confined his operations to the town of Kulladghee, which, as he states, does not give him a sufficient number of cases. The Municipality offer no objections to his working in other villages even within a radius of 8 or 10 miles, and by the recommendation of Dr. Pinkerton, he has been accordingly directed to work in the neighbouring villages. From there we travelled to the Bagehwara talooka. After two days delay I met the vaccinator General No. 192 at Mookurteehal, and examined his work in 10 villages altogether. In Telegee his lymph was very indifferent, though in other villages where his lymph was established it was good, the vesicles well formed, but small. In this talooka I visited in company with the Superintendent General of Vaccination the village of Sanchnal, and on calling over the names as usual, was told that one child was suffering from small-pox after having been successfully vaccinated. On having the child produced there was no doubt of its having the disease, but any marks of vaccination could not be discovered, nevertheless they still persisted that this was the child that was vaccinated. The vaccinator was absent, but on his arrival he informed us that he did not operate on this child but another in the same house, and the father who was sent for then stated, in contradiction to the assertions of the Patel and the mother, that his vaccinated child had gone to another village. To clear up the mystery the child was sent for and sure enough there were recent marks of vaccination on both arms, and it was from this very child that the vaccinator had taken lymph to vaccinate others. This again shows how careful one should be in not too readily giving credence to the assertions of village officers respecting vaccination, who generally know little about it, and to save themselves trouble will make

almost any statements. In Hovin Hypurgee small-pox was prevalent at the time of our visit, and the vaccinator had been able to do but little work by reason of the lukewarmness of the village officers in giving him assistance. The Superintendent General of Vaccination represented it to the Collector, but I have not yet heard if a better state of affairs as yet obtains or not.* Here I parted with Dr. Pinkerton, who had been with me now nearly three weeks, and from whom I derived considerable information regarding the office records, &c., some of which it seems had been unnecessarily kept for some time, and had added not a little to the extra work of the office. Since their discontinuance and the use of more printed forms there is a good deal less labour, but still a competent English writer is urgently required in my office. I then visited the Shindagee vaccinator, Gungadhur Ramchunder, who is doing very little work. He is dissatisfied with his removal from the Sholapoor to Kulladghee district. His lymph was good. He did not understand the new forms, as I may say very few of the vaccinators do. He was working very irregularly in his talooka, going from one village to another at long distances apart instead of working straight forward. I next met the Indee talooka vaccinator, Ramchunder Trimbuck, at Utharga. This is another of those transferred from Maratha districts, and he experiences some difficulty in getting on with his work. He had very good lymph in some villages, though his old work in the village of Seerkunhallee was very indifferent. At Benkunhallee small-pox was present in the village at the time of my visit, though the village officers were evidently desirous of concealing this from me, and I only found it out accidentally as I was leaving. The Koolkurnee had much obstructed the work, and his conduct I brought to the notice of the Collector. The Foujdar of the talooka had just arrived and he fully bore me out in my suspicions of this man. I requested the Foujdar to see that measures were taken to prevent any infected persons leaving the village, and directed the vaccinator to continue his work here with more activity. The Patel seeing the consequences apparently of his neglect, now readily tendered his assistance to the vaccinator. At Beejapoor, were I next travelled to, the vaccinator's work was not very satisfactory. His lymph was fair, but I established English lymph, received from the Superintendent General of Vaccination. This vaccinator has not done as much work as he should have done. He was afraid of vaccinating too many, lest he should have none to vaccinate after a time, for his operations have been confined almost solely to the town of Beejapoor. Now, however, he will work in villages at a distance also. This man is sharp enough, but is indolent and requires a deal of looking after. I again met the Superintendent General of Vaccination at Jutt and the Superintendent of the Central Circle. I then visited the Jumkhundee State, whose vaccinator was unfortunately working in the Dharwar district, so that I did not see him. I examined however his old work in the town of Jumkhundee and some villages, and the result of my inspection of schools in Jumkhundee and three villages are as under:—

---

* Mr. Monk Mason issued instructions to Mamlutdars to assist the Vaccinators.

	Vaccinated.	Unvaccinated.	Small-Pox.	Remarks.
Jumkhundee	54	62	48	
Humnoor	.....	.....	29	
Kunputtee	2	.....	8	
Goddahal	.....	.....	.....	None Vaccinated.

from which I must conclude the state of vaccination to be very unsatisfactory. I represented this to Major Westropp, the Assistant Political Agent, and attributed the defective vaccine arrangements to the following causes :—1st, the want of some active supervision over the vaccinator ; 2nd, the non-testing of the returns of the vaccinator ; 3rd, the want of village registers ; and 4th, the village officers not assisting the vaccinator. I recommended that the vaccinator should be directed to forward me a verification return under the signatures of the village officers monthly, and that he should be directed to work more regularly. Major Westropp brought the subject to the notice of the Chief, who, I believe, however is unwilling to place the vaccinator more under my control, or permit him to forward his returns in a fuller form than he has hitherto done. The total number vaccinated by him monthly is only stated. From thence I travelled to Moodhole, and inspected the vaccinator's old and recent work in several villages. In some it was fair, but in others bad, and he has not been doing nearly as much work as he should do. He is very careless and lazy, and I have had occasion to fine and reprimand him several times. I informed him on my departure that unless he improved I should recommend his dismissal. I next proceeded to the Uthnee talooka of the Belgaum Collectorate, and *en route* visited the town of Fezdul of the Sanglee State, where no vaccination either there or in the surrounding villages had been done for many years. I brought this to the notice of the Assistant Political Agent (in whose district it is), who pointed out to the Chief the desirability of directing his vaccinator to proceed there at the earliest opportunity. The villages around Belgaum belonging to the Sanglee State are mostly vaccinated by the Government vaccinators, as the Chief's vaccinator rarely visits them. I next met the Uthnee Municipal vaccinator at Uthnee, and inspected his work there and in other villages, with which I was quite satisfied. A vaccinator has only been working in this talooka for about 18 months, and already much of the opposition and apathy that was at first evinced is steadily disappearing. In one village two natives threatened to beat the vaccinator if he proceeded to vaccinate. This was brought to the notice of the Mamlutdar, who very properly fined them. Another instance occurred just before my arrival of two persons of the village of Ajoor intimidating the vaccinator, so that he was afraid to commence work. I had these men sent for, but though I remained several days at Uthnee they had not arrived up to the date of my departure. The Mamlutdar however subsequently informed me that he

had dismissed them with a caution for the future. Vaccinator Gopal Balall informs me he has experienced much less difficulty in procuring cases since Mr. Grey's visit here of late. It seems Mr. Grey made some inquiries regarding vaccination, and if more of the District Officers would do so too I am certain there would be very much less trouble. I then travelled to Meeruz and examined the work of the Chief's vaccinators in Meeruz and elsewhere. Mahadajee Juggonath has improved since I saw him two years ago; he is a slow, steady man, and can vaccinate well enough, but he is somewhat indolent. His lymph was fair, but showed signs of deteriorating, so I replaced it from tubes I had with me. I also inspected the work of Anna Sahib's vaccinator, Khrishnajee Gunesh. His lymph and work were very indifferent, so I directed him, should the tube supplied fail, to procure lymph from Trimbuck Anunt, the Tasgaum vaccinator, near whom he was working. This man has only vaccinated in seven villages throughout the year. I brought this to the notice of the Chief's Kharbaree, as also to the Chief himself, who informed me personally that he would cause him to be directed to do better in future. The Sanglee vaccinator, Mahadajee Juggonath's lymph and work were very good. He is a careful, steady man and successful operator. I next travelled to Korundwar and examined the Sherole vaccinator's work in Sherole. In the town of Sherole his lymph and work were very fair, but in the village of Takowlee his lymph and marks were very bad. In another village however he had very good lymph, and it was only through great carelessness and to save himself trouble that his work in the above-mentioned village was so indifferent. He had vaccinated from glasses and propagated lymph from ill-formed and irregular vesicles. In consideration of his lymph being good elsewhere and having only recently fined him I merely cautioned him on his promising to amend. At Korundwar the Chief was very attentive and rendered me every assistance. The vaccinator was working in the Tekoteh district, where I had previously seen him. There are two vaccinators entertained by the Chief of this State, but their pay, Rs. 8 and 10 per mensem, is scarcely sufficient to induce them to work efficiently. They work very irregularly and receive their pay in the same manner, which makes them careless. At Echulkurrunjee I examined the work of the substitute appointed in the place of the late vaccinator, Gunesh Balajee, deceased. He has only recently commenced work but promises to turn out a good vaccinator. The Kharbarree speaks well of him. This concludes my tour for the year, during which I have travelled 2,197 miles, examined 186 villages, and inspected 6,579 vaccinated persons.

Aid from Civil and Political Officers acknowledged.

17. To the Civil authorities I have to tender my best acknowledgments for the willing assistance they have at all times rendered me; especially are my thanks due to the Collector of Kulladghee and the Assistant Political Agent of the Southern Maratha States. On my entering the Kulladghee district, or rather sometime previously, I wrote to the Collector requesting he would be so good as to direct the Mamlutdars of the talookas I intended to visit, to inform the Patels and Koolkurnees of villages that they would be expected to collect the vaccinated cases for my inspection at my request, and from the way in which in

most places my directions were attended to I have reason to believe that he did so. Certainly during this season's tour I have had much less trouble in this way than I have usually met with. I also informed the Assistant Political Agent at his request of the probable dates on which I might be expected at the different Jagheer States, and he very kindly gave notice to the Kharbarrees, so that on my arrival I had much less difficulty than formerly in making arrangements for seeing villages and meeting with the vaccinators.

WESTERN CIRCLE.

Superintendent.—Surgeon H. J. Blanc, M.D.

Establishment.—15 Vaccinators under Government, 2 under Municipalities, 10 under Local Funds, 2 under Native States, and 1 Station Vaccinator.

Population, 1,694,868.—Total cost Rs. 18,792. Average cost of each successful vaccination and re-vaccination, 5 annas and 5 pies.

Establishment.	Years.	Total vaccinated and re-vaccinated.	Compared with the preceding year.		Successfully vaccinated and re-vaccinated.	Percentage of success, excluding unknown, in	
			Increase.	Decrease		Primary vaccinations.	Re-vaccinations.
Government	1869-70...	35,904	.....	.....	34,752	96·7	.....
	1870-71...	36,984 1,178*	2,258	.....	35,867 873*	97·8	..... 79·3
Municipalities	1869-70...	1,168	.....	.....	1,096	92·2	.....
	1870-71...	2,355 33*	1,220	.....	2,179 9*	94·9	..... 27·2
Local Funds	1869-70...	.....	.....	.....	.....	.....	.....
	1870-71...	13,023 646*	13,669	.....	11,671 391*	95·7	..... 71·9
Native States.....	1869-70...	8,021	.....	.....	7,476	93·2	.....
	1870-71...	4,883 270*	.....	2,868	4,480 178*	92·5	..... 66·6
Dispensaries	1869-70...	2 934	.....	.....	2,273	.....	79·3
	1870-71...	2,612 142*	.....	180	2,159 97*	84·9	..... 70·3

In submitting my report on vaccination for the official year 1870-71, I have the pleasure of being able to show a very considerable increase over the preceding year.

General Progress.

After deducting 2,868 for decrease in the Native States' vaccination, the present increase exceeds the number of operations performed during the season of 1869-70 by 14,099. If again the year

* Indicates re-vaccinations.

under report be compared with the year 1868, it will be seen that the progress of vaccination in this Circle has been very satisfactory, and that the number of operations has increased from 38,133 to 59,372. 57,245 primary vaccinations performed during a year in a population said to be about 1,690,000, or even, as I believe, more correctly about 2,000,000, is, I deem, a highly satisfactory result, one hardly obtained in European countries, and one which I have much pleasure in recording.

Increase.

2. The increase is due principally to the employment of Local Fund vaccinators, but not entirely to that cause, as we have an increase also in both the Government and Municipal establishments. In 1869-70 the working staff of this Circle was $18\frac{6}{12}$, that is to say, eighteen men were employed vaccinating during twelve months and one during eight; in 1870-71 the staff is represented by $23\frac{8}{12}$, or twenty-three working vaccinators during twelve months and one during eight. It will be seen by these figures that I have been working this year with a staff somewhat below the sanctioned strength. The following causes influenced the temporary reduction of the staff below the authorized strength:

(*a*). The difficulty in finding suitable persons for the ten appointments I was suddenly called upon to make in the Local Funds' Vaccination Establishment; they were only gradually filled up, and two vacancies still exist in that establishment.

(*b*). Much sickness among the vaccinators, specially among those employed in the Tanna collectorate, due to malarious influence.

(*c*). Sick and privilege leave granted to several vaccinators.

(*d*). Dismissal of two vaccinators.

(*e*). The station vaccinator of Rutnagherry was included in my establishment only since 1st of March last.

(*f*). Sickness and resignation of the Native State vaccinator of Johar.

It is apparent, as I have already mentioned, that the present increase is not entirely due to the employment of Local Funds' vaccinators, and I feel pleased to be able to record that, with few exceptions, the vaccinators employed in this Circle have done their very best, and that the annual returns which I have the honour to submit herewith, speak very favourably of the endeavours and industry of all.

Decrease.

3. There is a decrease in the Native States' vaccination, but this does not affect the progress of vaccination in those States; it is merely a passing and temporary decrease brought on by exceptional circumstances. The vaccinator employed by the Native State of Johar was reported sick in the beginning of July last; he was sent to the Tanna hospital, where he remained several weeks very seriously ill from an attack of remittent fever. On his recovery he positively declined to return to Johar, and another vaccinator was appointed in his stead. This man a few weeks afterwards also resigned his appointment; he disliked the place, he was afraid to take his family there, and, as he informed me, he preferred poverty in Bombay, to dwell alone in the wild malarious

jungle of Johar. Under these circumstances I felt that it would be useless for me to appoint another man, and I considered that the only feasible plan was to get a native of Johar to accept the post. I accordingly wrote to the Political Agent of Johar, requesting him to select a young man, whom I would instruct and keep by me until I deemed him fit for his work ; at the same time I recommended that the pay should be increased, so as to induce a young man of a respectable family to accept the appointment. The Political Agent (who is also the Collector of Tanna) approved of my suggestion, and he directed the Kharbaree of Johar to select a proper person. For many months no one could be found to accept the appointment ; at last, to my urgent and repeated requests, I was informed that a good selection had been made ; but a few days afterwards I was told that this candidate had, at the eleventh hour, also declined the honour of being the public vaccinator of Johar. To make a long story short, and suffice it to say, that it was only last month that a young man presented himself to me as the candidate-vaccinator selected by the Kharbaree of Johar. This young man has since been studying under my directions ; he is a well-educated youth, by caste a Brahmin, and from what I am able to judge, he will make a first-rate vaccinator ; and should he, as I hope, persist in his intention to settle down in Johar, we need have no fear as to the progress of vaccination in that Native State. By the beginning of next month he will be able to join his appointment.

Native State of Jinjeera.

4. There are only three Native States in the Western Circle, and one of them, Jinjeera, does not provide for public vaccination. I had proposed to go to Jinjeera myself this season, and urge personally upon the Authorities the necessity of introducing vaccination into that Native State. But the political disturbances which occurred there lately, and the unsettled state of affairs that followed, induced me to postpone my visit to a more favourable time. I had the pleasure of meeting on my tour, in March last, the Collector of Colaba, who is also the Political Agent of Jinjeera, and from some conversation I had with that Officer, I thought that I perceived some chance of succeeding, and accordingly I wrote to him at once on the subject. I stated that I had reason to believe that small-pox and the practice of inoculation were both more or less prevalent, at all times of the year, in the Native State of Jinjeera ; and that, considering the vicinity of Jinjeera to Bombay, and the daily intercourse of the inhabitants with the neighbouring talookas, I trusted that he would agree with me, that this deplorable neglect of a great sanitary measure should not be allowed to continue any longer, and that without further delay the benefits of vaccination should be accepted by a Native State in which the Bombay Government had repeatedly shown great interest. I heard lately from the Political Agent that he is strongly urging the matter, and I feel confident that in next year's Report the Native State of Jinjeera will occupy a good place, and fairly rival in vaccination both Johar and Sawunt Waree.

Municipal Vaccination.

5. This year's Report shows an increase of 1,220 operations performed by the Municipal Vaccination establishment, although the number of vaccinators employed by Municipalities has been re-

duced from 3 to 2. At the beginning of the official year I visited Oorun and Panwell, and from what I saw, I felt convinced that one vaccinator for the two Municipalities, would answer better than if both Municipalities were allowed to entertain each a separate one. The Presidents of the two Municipalities agreed to my proposal, and the Municipal vaccinator of Panwell was placed in charge of both towns on a slightly increased pay and with a peon allowed. He has performed 846 vaccinations more than the two vaccinators did in the previous year, and there was a saving of Rs. 60.

Local Funds.

6. I had a good deal of trouble with the Local Funds' vaccinators. At the beginning of the official year I was called upon to fill up the appointments which had just then been sanctioned. Several appointments were given to young men who had served as "candidates," and who had received very flattering testimonials from the vaccinators under whom they had served. As it turned out, most of these men were grossly ignorant, or lazy, idle fellows, and more likely to injure the progress of vaccination than to further its cause. For instance, a man, recommended by a Medical Officer, was appointed to the Bhewndy talooka, and during the three months he remained there, he never vaccinated a single child—*Ab uno disce omnes.* In my difficulty I applied to the Presidents of the Local Funds Committee for permission to employ two candidate vaccinators, in place of a vaccinator and his peon, giving each candidate an allowance of Rs. 10 a month. All the Presidents, I am thankful to say, consented, and afterwards I got on very much better. Candidates for employment were attached to my office, and I was able after a short time to form an opinion concerning them. When I perceived that by their intelligence, activity and willingness, they were likely to become good and useful vaccinators, I instructed them in their duties; and when I deemed their requirements satisfactory, I then sent them on trial to vaccinate in some districts where I myself would be shortly going. All the vacancies have been filled up by men thus trained, and the two remaining vacancies will be very shortly given to two candidates of whose fitness I am well satisfied.

Dispensary Vaccination.

7. Last year I was not pleased with the Dispensary vaccination. I am glad to be able to report this time more favourably upon it. The Dispensary vaccination shows this year an increase of 441 operations, and the percentage of success, though still low, is somewhat better than formerly. This improvement I consider is due to the new plan proposed by myself, and followed by several of the Medical Officers in charge of these Charitable Institutions. At the beginning of the official year I issued a circular calling upon the Medical Officers, and subordinates in independent medical charge of Dispensaries, to vaccinate once or twice a year, in as many sittings as might be deemed necessary, all the unvaccinated children of the towns in which they respectively reside. March and April, December and January, should, I said, be preferred; I also suggested that before beginning their half-yearly vaccinations, they should inform, and request the assistance of, the local Civil Authorities, and at the same time communicate with the parents of all unvaccinated children as far as practicable. The Superintendent

of Vaccination should also be informed, so that he might direct the district vaccinator to accompany or send to the Dispensary a few healthy children bearing good vesicles, from which the work should be begun. It was recommended that not less than fifteen or twenty children should be vaccinated at one sitting; this average being necessary in order to maintain a supply of good lymph, from which alone vaccination should be performed. I expected that by adopting this plan a higher percentage of successful cases would be obtained, and that it would prove satisfactory, both in its working and in its results, to the Medical Officers themselves and to the people under their care. Nor have my expectations been deceived: those who have followed correctly and entirely my suggestions, have done good and creditable work. Mr. DeSouza at Bandora, Mr. Munday at Vingorla, have both worked well; but foremost of all, I would place Mr. Dunjeebhoy, in charge of the Callian Dispensary, who has worked the new system with much intelligence and zeal, and who was able in consequence to show an increase of operations from 43 in 1869-70, to 109, in 1870-71 whilst, at the same time, his percentage of success rose from 80 to 96·2.

Lymph.

8. During November and December the lymph was reported bad in many talookas. I believe that the climate of the Konkan after the rains is very unfavourable to vaccine lymph. Good lymph was repeatedly forwarded to the vaccinators who had complained of theirs, and by the middle of January it was everywhere reported good. I saw some very good vesicles occasionally; others somewhat inferior owing to their very rapid development and the purulent tendency of the lymph. As a rule, however, seventh day vesicles contained good lymph, and gave very fair results.

Cicatrices.

9. I have taken notes of the character of cicatrices and vesicles in some 9,000 cases. I will give the result of my observation in the following tabular statement: —

	Very good.	Good.	Indifferent either in number or quality.	Indifferent both in number and quality.	Bad.	Sores.
Cicatrices	2,308	4,155	1,198	438	226	83
Vesicles	68	97	73	41	31	2
Total.....	2,376	4,252	1,271	479	257	85

The total of unsuccessful cases is 678, which added to the total in the above Tabular Statement, gives a grand total of 9,398. If from this number we deduct 85 for sores, which should be considered in this case as "unknown," we obtain a percentage of success equal to 93·5; and again, if we consider the "257 bad" as unsuccessful, the percentage of success would be 90·8. This is far from being a low percentage. No doubt in *England*, Marsan, Tomkin, or Ceely can boast of more, but taking all unfa-

vourable circumstances into account, the difficulties of so many kinds our Native vaccinators have constantly to contend with, and I maintain that a real and probably permanent successful result, equal to 90 per cent. of operations performed, is very good indeed.

Small-pox.

10. Outbreaks of small-pox were frequently reported to me as having occurred in the Rutnagherry Districts. Whenever possible I went myself to the locality and very often found no small-pox at all, simply chicken-pox or a few isolated sporadic cases. In some places small-pox existed, but it was of a very mild character, and I believe that much exaggeration exists on this point. I have not succeeded in obtaining small-pox returns from Rutnagherry, but if they are not more valuable than those received from the Tanna and Colaba collectorates, sanitary science does not lose much by their absence.

Inoculation.

11. Inoculation is frequently practised in the Rutnagherry Districts. When the presence of an inoculator in a talooka is reported to me I at once bring the matter to the notice of the Civil authorities, who manage to drive him away from the locality; but he generally turns up again elsewhere before long. It seems difficult to put a check to inoculation as long as the law is helpless in prosecuting inoculators and whilst the people of this country are favourably disposed towards it.

General progress of Vaccination.

12. Altogether the condition and progress of vaccination in this Circle may be deemed very satisfactory; patience, time, and good vaccination will decide the few wavering that may remain, but, as I have already mentioned, nearly 60,000 operations among a population of about 2,000,000 is quite as much as we are entitled to expect anywhere. There are a few localities in this Circle where vaccination is not received with the same favour as it generally meets with; the causes may be many, and I propose next season devoting myself to overcome the apathy or resistance which is complained of, notably in parts of the Bhewndy talooka, in some localities in Salsette, and in a few of the seaport towns. I have frequently gained over whole fishermen villages, whose inhabitants had proved most obstinate to the voice of the vaccinator, but who gave in at once when the subject was placed before them in a sensible manner, and when they saw that there was no coercion, but simply a laudable desire on the part of the Government to protect the lives of the people of India against fatal and dreadful diseases, they resisted no longer but cheerfully consented to receive the vaccinator and promised to afford him every assistance. I have no doubt that a similar result will also be obtained in the localities I have just mentioned, although it may require both time and perseverance for us to win over the more bigoted of the population.

Conduct of the Vaccinators.

13. One vaccinator, Babajee Yadew was reduced to assistant vaccinator, on account of his dissipated habits; he is a bad bargain and never will do much good in the service, and another man, Assistant

Vaccinator Govind Ballal, was dismissed the service for falsifying his returns, which he had done to a considerable extent, and for many years ; a third, Assistant Vaccinator Cassaram Palkar, was also dismissed the service for misappropriation of public moneys, the amount was trifling and a falsehood was pleaded in justification. Unfortunately the man had a bad name; he had been accused several times before of obtaining money and supplies from the parents of the children he had vaccinated. On one occasion I had to fine him for being absent without leave, on another occasion for detaining his peon's pay, and he was met last April at Narel, by the vaccinator attached to this office, the very day he should have been vaccinating in his talooka some sixty miles away. I felt bound under these circumstances to recommend his dismissal. But now that he has been severely punished, I trust that the experience he has gone through will teach him honesty and a better sense of duty, and I beg therefore to recommend him to the merciful consideration of Government, and that in consideration of his fourteen years' previous service he be reinstated but in a lower grade. No vaccinators have been suspended ; the amount fined was altogether Rupees 42, and no other punishment of any kind was deemed necessary ; indeed most of the men have done their duty well; the Local Funds' vaccinators at present employed give satisfaction, and taking every thing into consideration I deem the conduct of the vaccinators on the whole both good and creditable.

Tour.

14. At the beginning of the official year I visited part of the Tanna Collectorate. During the rains I proceeded to Poona to work at animal vaccination. In the beginning of October I proceed to Dapoolee, from thence I visited the whole of the Rutnagherry collectorate ; from Vingorla I returned North by sea and proceeded to Mhar, and from that place through the Colaba collectorate, which I also completely inspected.

15. Travelling in the Western Circle is no sinecure, it is both expensive and difficult, and I fear that on this account the Western Circle must always stand low, if not lowest, when compared with the other Circles of Superintendence. Extent and rapidity of travelling are not very feasible in the Konkan.

Variolation.

16. I made during the year a series of experiments on the variolation of cows and heifers, and although I placed myself in the most favourable condition for success, I always and completely failed ; nor was I, while on tour, more successful in my attempts to vaccinate heifers with heifer vaccine lymph, and the only time I obtained a favourable result was in retrovaccinating a calf: the vaccinations obtained with this lymph were very good, although not so readily accepted by the human system as humanized lymph generally is. Thanks to Mr. Anunta Chandroba I received on several occasions some very good lymph to replace some that had degenerated, nor did I forget him ; I obtained from Dr. Warlomont, of Brussels, a fresh supply of Cow-pox on ivory points, which I at once forwarded to Mr. Anunta Chandroba, and I have had the pleasure to learn from that gentleman that they have proved very successful.

17. The Civil authorities have always and on every occasion afforded me their very valuable support, and doubtless it is to the interest taken in our work by Civil Officers of all grades that we owe our good progress, and it is again to their support that I look to for overcoming any prejudice that may still exist in a few localities.

Aid from Civil Authorities acknowledged.

NORTHERN CIRCLE.

Superintendent.—Muncherjee Byramjee Colah, M.D.

Establishment.—35 Vaccinators under Government, 7 under Municipalities, 14 under Native Chiefs, and 22 Dispensaries.

Population 2,892,520.—Total cost Rs. 22,215; average cost of each successful vaccination 4 annas and 3 pies.

Establishment.	Years.	Total vaccinated.	Compared with the preceding year.		Successfully vaccinated.	Percentage of success, excluding those unknown, in	
			Increase.	Decrease		Primary vaccinations.	Re-vaccinations.
Government	1869-70 ...	70,273	.....	.....	65,228	96·9	.....
	1870-71 ...	63,190	.....	7,083	56,022	95·3	80·4
Municipalities	1869-70 ...	6,874	.....	.....	2,721	97·6	.....
	1870-71 ...	9,111	2,237	.....	8,316	96·9	85·8
Native Chiefs	1869-70 ...	22,734	.....	.....	20,964	95·8	.....
	1870-71 ...	21,453	.....	1,281	19,471	95·5	84·0
Dispensaries	1869-70 ...	6,437	.....	.....	5,559	89·7	.....
	1870-71 ...	4,453	.....	1,984	3,683	90·7	58·3

With reference to the above summary of work, it is necessary to state that in this year's returns are incorporated in the Municipal establishment, the work of the two Municipal vaccinators of Ahmedabad, and 8 months of the Municipal vaccinator of Broach, and in the Dispensary establishment the work of all the Government vaccinators working under the Civil Surgeons. Taking the result as a whole the work amounts to 98,207, whereas the last year's total was 106,318, showing a decrease of 8,111. It may, however, be fairly stated that the progress of vaccination in this circle during the past year has been satisfactory. There is a large decrease in the work performed by the Government establishment. There were a few stoppages in work on account of sickness among vaccinators, and deterioration and loss of lymph, but these were not such as to justify me in attributing the large decrease to such causes which occur to more or less extent every year, nor can the decrease be said to be owing to

General progress of Vaccination.

Decrease.

any idleness or want of zeal among the vaccinators. With reference to the large number of operations in the preceding two years, it must be remembered that there was then a large influx of destitute Marwarees into Gujarat, many of whom were vaccinated. During the year two municipalities, Neriad and Dundooka, have entertained vaccinators, so the work of those places which otherwise would have been performed by Government men, and included in the Government establishment, now goes to form the increase in the Municipal establishment. A glance at column 5 of statements Nos. I. and V. shows that notwithstanding the performance of re-vaccinations there is a general slight decrease of work in almost all talookas. This general decrease is, I believe, chiefly owing to want of unprotected children. For the past two years each talooka had a separate vaccinator and some of the large talookas were provided with two. Vaccination has now been so thoroughly carried on everywhere that now our men have only to work among the new produce of their talookas. As opportunity offered I have reduced hands, and during the year two vacancies were not filled up, so that the work of the Government establishment is only for 30 men. As regards the Municipal establishment, deducting the work of the two municipal vaccinators of Ahmedabad and of the municipal vaccinator of Broach, the total would be 3,171, giving a slight increase of 544 operations over last year. The Dispensary total includes the work of the Civil vaccinators of Surat, Broach and Kaira. The purely Dispensary vaccinations amount to 1809, which is a decrease of 860 operations. As regards the Native States' establishment, owing to the dishonesty and dismissal of several vaccinators, there was a considerable stoppage of work in the Pahlunpoor Superintendency, amounting nearly to the work of two vaccinators for the whole year. Compared with last year's work, however, the decrease of 1,281 operations is a very slight one. Taking the whole work performed by the four establishments as shown in the summary at the head of this report, the total number of operations performed during the past twelve months is 98,207; of these 87,492 were successful cases, this gives 93·7 as the percentage of success.

Lymph.

2. On the whole, judging from the reports of vaccinators and from actual observation of the lymph during the year under report, I may say that the lymph in use is good. Of the 30 vaccinators whose lymph was examined during the year, the lymph of 15 was undoubtedly good—of 8 it was not quite satisfactory, chiefly owing to the indifference and neglect of the vaccinators in not selecting good vesicles for propagating their lymph and in not inserting sufficient lymph into each puncture. Requisitions for supplies of lymph were received from several medical officers and subordinates, and were all complied with. About 130 tubes of fresh lymph were thus distributed in several parts of this circle. A packet of English lymph, consisting of 24 tubes, from the National Vaccine Institution of London, was received through the Superintendent General of Vaccination about the middle of November last. The tubes were all in good condition, and were used by me at Sanund, the lymph produced good and characteristic vesicles. The neighbouring vaccinators of Duskroi and Veerumgaum were directed to introduce this lymph into

their talookas. About the close of last year I received a supply of animal lymph in tubes from the local Superintendent of Vaccination in Bombay. From this lymph a couple of children were vaccinated at Cambay. The lymph produced good pearly vesicles. Some more children of Cambay were vaccinated, and I charged a few tubes and took them with me to Borsud, where a retransmission was successfully done. A supply in tubes taken from Borsud was introduced successfully at Towra in Broach talooka, and from thence a supply was sent to Jamboosur. Out of the few children vaccinated by myself direct from the heifer-lymph in Surat, I was able to see one partially successful case and from this I filled one tube with difficulty. This tube, charged on the 19th October 1870, remained with me till the 14th January, by which time all the lymph in it had solidified. In using this tube at Deesa I was obliged to break it into several pieces, which were moistened in a little glycerine, even then I could extract very little lymph from it, and with this one child was vaccinated. On the 8th day, two small but pearly vesicles were observed. I directed the vaccinator to allow these vesicles to develop till the 9th or 10th day, and then to vaccinate one or two children. He did so; a second transmission of this lymph producing very good vesicles, and he has been working with this lymph since the end of January. He is a vaccinator of 12 years' standing, and reports that the vesicles produced by this lymph are very large, and that during all his service he has never seen such good results. He sent me a supply of this lymph in tubes, which, after remaining with me for more than three weeks, was used at Bayud in Morassa talooka with good results. It produced beautiful vesicles and the lymph yielded was very clear and viscid. Every monsoon there is deterioration of lymph to a certain extent, but, during the last one, the deterioration was observed to be very great and general. In many talookas it continued from August up to November, and in some quarters it had to be entirely given up. This general deterioration of lymph every monsoon may be partly owing to the combined influence of heat and rain, but I believe it to be mostly due to the entire want of care on the part of the parents. The mass of the village populations being chiefly agricultural, the monsoon is the busiest season for them, and every member of a family capable of any work goes to the fields, and mothers have of necessity to take their children with them; add to this the nuisance of the flies, which is a sort of plague in Gujarat. I have myself noticed that, in the twinkling of an eye, a fly can suck up the lymph from a well-charged lancet. After vaccination the flies regularly stick to the punctures and dry them at once, and when vesicles form on the arms the irritation produced by the flies causes the infants naturally to scratch the arms, and thus vesicles are opened and destroyed. During the monsoon, in consequence of this fly nuisance, to carry out vaccination is a work of the greatest difficulty: it entails the utmost care, and this very few of our vaccinators take. The result is that more bad work is done during these few months than during the rest of the year. During the coming monsoon I shall direct the vaccinators only to vaccinate the children of tradesmen and such other people of villages as are not likely to expose their children to rain and heat, and to do only enough of work each week to keep up their lymph.

3. During the year under report the attention of all vaccinators has been frequently drawn to the great necessity of doing good work only. Circulars were issued, enjoining them to perform every vaccination most carefully, to use the utmost caution in the selection of really good lymph, to charge their lances afresh for each puncture, and carefully to insert a good quantity of lymph on each occasion, and never to attempt making two or three or more punctures from one charge of the lancet. In case their lymph was spoiled, they were directed at once to report the same unhesitatingly, to stop work, and not to continue for a single day the use of such lymph; and all have been distinctly informed that in case, on inspection of their work, it was found that these instructions were disobeyed and bad work performed, then they would be dismissed from the service.

Vaccinators cautioned to do good work rather than too much of it.

4. The importance of all vaccination statistics depends not only upon the correctness of the numbers vaccinated, but upon the precision with which the ages and results of the vaccinations are recorded. As regards numbers the returns of this circle can be mainly relied upon. Since the last two years a modification has been adopted in the method of filling up the columns of age and result. Instead of the usual way of filling up columns with 1, the column "under 1 year" is now filled with the exact number of months of the age of the child up to 12, and the column "above 1 year" is filled with the exact number of years similarly. As regards noting the result, the column of "successful" is filled up with the exact number of vesicles developed. Experience of the past two years enables me to state that this method has induced among the vaccinators a great deal of accuracy of observation, and the inspection-results show that the returns of almost all are in the main correct. A careless and indifferent man is easily detected at the time of examination, and is adequately punished.

Columns of age and result to be carefully filled in.

5. In para. 9 of last report mention was made of the introduction of vaccination into Dhurmpoor, and I have now the pleasure to report that mainly through the exertions of Mr. Hope, the agent to the Governor, vaccination is now introduced into the neighbouring state of Bansda.

Vaccination introduced into the Native State of Bansda.

6. It also affords me much satisfaction to report that during the year under review I have succeeded in getting a few of the Municipalities of Guzerat to employ their own vaccinators. When my last report was submitted there were only four Municipal vaccinators in the whole of Guzerat; this number is now increased to seven. After repeated representations the Dhundooka municipality agreed to entertain a vaccinator and one was engaged and has been working since July 1870. And I am glad to report that the Neriad municipality has also sanctioned an annual expenditure of Rs. 300 for a vacccinator.

Municipal Vaccination.

7. Dispensary vaccination has had a fair trial during the year under report. There are in all 22 dispensaries. In my last report I mentioned that almost all the dispensary medical officers were written to, and encouraged to carry on vaccination, notwithstanding which a glance at statement No. V. will show that dispensary vaccination has progressed very little as regards numbers, and as regards quality—as far as my experience has gone—the work done is far from satisfactory. I am sorry to remark that several of the Dispensary Hospital Assistants have no practical knowledge of vaccination.

Dispensary Vaccination.

8. Re-vaccinations have been for the first time carried on in this Circle. The returns show that 11,666 operations have been performed. With the permission of the Collectors of Surat and Ahmedabad I got a notice about re-vaccination printed with their signatures to it, and these were distributed in the whole of the zillas through the Mamlutdars. The Collectors of Kaira and Broach and the Political Officers of Palhunpoor and Mahee Kanta got the notices lithographed for themselves and circulated them among the village people. I directed the vaccinators to read the notices and show it to the people of villages where the tulatees had failed to do so. During the past few months I inspected many of these re-vaccinations; some of the vesicles I saw in August last were as good as primary vesicles, and the marks of re-vaccination cicatrices were also pretty good: in a few instances these were to be seen side by side with the cicatrices of primary vaccinations. The success which attends re-vaccination is a fair index of the necessity for its introduction.

Re-vaccination.

9. During the monsoon I spent about three weeks in Bombay with the Local Superintendent of Vaccination, in studying, practically, the method of carrying on animal vaccination. On my return to Surat arrangements were made for a supply of heifers on very reasonable terms. For a loan of a heifer for 8 or 10 days one rupee was to be paid, and the heifer to be fed during that time; if it belonged to a milch cow then the heifer was to be sent to the owners morning and evening about milking time. The feeding of the heifer for the week cost about 8 annas, and the shaving on each occasion cost two annas. The first heifer was inoculated on the 14th September 1870, it turned out a complete failure. A second heifer was again inoculated on the 26th September which partially succeeded and from which a third heifer was inoculated on the 30th September with good results. The lymph used on the 14th and the 26th September was kindly supplied to me by Dr. Blanc, Superintendent Western Circle. Dr. Gane, the Civil Surgeon, and Dr. Ticehurst, the Staff Surgeon, attended almost every time to see the process. Sub-Assistant Surgeon, Mr. Ruttonjee Hormusjee, in charge of the Bechurdass Ambaidass Dispensary at Ahmedabad who was then on privilege leave in Surat, and Sub-Assistant Surgeon Mr. Dossabhai Pestonjee in charge of the Paruck Charitable Dispensary, in Surat, also attended. During October 5 heifers were inoculated and in all 27 children were vaccinated. More than half of these were failures; in others only small vesicles were developed on the 8th day, and

Animal Vaccination.

those were only in a few of the several punctures made. Out of all the children seen by me, only one child had developed on its arms three good vesicles of middling size; from two of these vesicles I managed, with difficulty, to fill one capillary tube on the 19th October. The result of the use of this tube lymph has been detailed in para. 2. Experiments on animal vaccination in Surat came to a close on my leaving in November for the districts. As I should be for some months constantly on the move, and as under such circumstances it would be difficult to carry on animal vaccination, on my arrival at Ahmedabad, I asked Mr. Ruttonjee Hormusjee if he could undertake to carry on animal vaccination. He readily consented to do so. I then waited upon Mr. Borradaile the Collector, and requested the grant of some money for carrying on animal vaccination in Ahmedabad. Mr. Borradaile very cordially consented to give Rupees 100 from Local Funds. By Resolution No. 2963 of Government in the General Department, sanction to this expenditure was given. On the 12th November, I inoculated a heifer at the Bechurdass Dispensary out of some lymph kindly supplied to me by Mr. Anunta Chundroba. On the 17th this operation was found to have so far succeeded as to enable me to inoculate another heifer to a good extent. Dr. Wyllie, the Civil Surgeon of Ahmedabad, had seen the method of animal vaccination as carried on in Belgium, but he kindly attended the dispensary on the 17th to see the process. I gave over charge of the last heifer to Mr. Ruttonjee, who, though somewhat interruptedly, carried on the work up to the middle of February, when in consequence of deterioration of the animal lymph it had to be given up. From November up to February 13 heifers were inoculated, and 53 children vaccinated with lymph direct from the heifers, and from the lymph of some of the successful cases, 149 children were vaccinated. During these experiments the process of carrying on animal vaccination was shown to Assistant Vaccinators Purbhooram Pransunker, Jeithalall Poonjajee, and Moola Ameeroodeen of the Government establishment, and to the Civil vaccinator of Surat and the two Municipal vaccinators of Ahmedabad. Surat and Ahmedabad being the two largest cities in this circle, it was my intention to make some definite arrangements for carrying on animal vaccination in them all the year round; in fact for the city of Ahmedabad such an arrangement was come to. The grant of Rs. 100 from the Ahmedabad Local Funds mentioned above was to cover all expenses up to March, and Mr. Borradaile said that in case further assistance was wanted, I was to apply for the same in March, so that the sum could be included in the Local Funds Budget for the current year. The results of Mr. Ruttonjee's operations at Ahmedabad have deterred me, for the present, from carrying these experiments further, especially as the bad results are attributed to deterioration of the animal lymph. With a fresh supply of good lymph I hope to continue these experiments on a future occasion.

Small-pox.

10. There has been no appearance of small-pox in this circle during the past year worth noticing, but just about the close of the year, I received a report of the appearance of small-pox in the Camp of Deesa.

11. When the year under report commenced I had just arrived and encamped at Broach. From April up to the close of June, I was engaged in inspecting the work of the talookas of Broach and Unklesur, and of the following talookas in Surat collectorate, viz. Olpar, Mandvee, Bardolee, Soopa, Chicklee, and Balsar. Vaccinations performed at the Mandvee, Bardolee, and Balsar Dispensaries were also examined. I left Surat for district work in November. Oomedwar Jeever Dajee's work in the talooka of Anund in Kaira zillah was examined and found satisfactory. I arrived in Ahmedabad about the first week of November, introduced animal vaccination there, and made arrangements for its being carried on for some lengthened period. During November and part of December, I was employed in travelling through and examining the work of the vaccinators of Duskroi, Sanund and Veerumgaum talookas of Ahmedabad zillah. The dispensaries of Sanund and Veerumgaum were also examined and remarked upon, in accordance with the instructions of the Superintendent General on this subject. I arrived at Punchasur in Rhadunpoor zillah, about the middle of December, from which time up to the end of January I was engaged in travelling through and examining the work of the vaccinators of the Native State of Pahlunpoor. Three of these men were found practising various kinds of dishonesty, one of them in addition had falsified his returns to a considerable extent. Two men who were most guilty were dismissed at once; the third, who was simply guilty of exercising dishonesty in making up his returns, and who was a very old servant, was severely reprimanded and cautioned that if he again was found doing the same he would be dismissed. From the commencement of February up to the close of the year I was engaged in travelling through Mahee Kanta. The work of all its vaccinators has been examined, and in addition the work of the three vaccinators of the Government establishment whose talookas lay in my way. During this tour I travelled through portions, more or less, of all the Government zillahs and through the whole of the Native States of Pahlunpoor, and Mahee Kanta. The work of 30 vaccinators and 5 dispensaries has been examined. Of the 30 vaccinators 20 were of the Government and 10 belonged to the Native States' establishment. Of 8 men whose work was unsatisfactory two were fined, and of the five men whose work was bad, one was dismissed and two were heavily fined. The two men found making dishonest and false returns were dismissed forthwith.

Tour.

12. Much difficulty is experienced in managing vaccination in the Native States of Pahlunpoor and Mahee Kanta: in the former there are the two Durbars of H. E. the Nawab of Rhadunpoor and of the Devan Sahib of Pahlunpoor, with which difficulties occur every now and then regarding vaccination matters. The pay of the vaccinators frequently falls into arrears; if this or any other subject, for which the vaccinator may not have found the necessary relief, is either reported to me or the Political Superintendent, he becomes distasteful to the Durbar, and his removal is desired. If on the other hand the vaccinator is in good favour with the Durbar, but not easily amenable to this office, and a fine is imposed, though *yads* are returned reporting the infliction of the fine, in

Difficult to manage in Native States.

reality nothing is done. No such troubles occur in Mahee Kanta, where the difficulty in carrying on good and continuous vaccination arises more from the nature of the province than from any other cause. To show this best I would quote here the first para. of my letter No. 411, dated 18th February last, addressed to the Political Agent, on the subject. "The division of Mahee Kanta into territories owned by the Edur Durbar, and by the several Thakoors has led to the entertainment of separate vaccinators. There are at present five vaccinators employed in the whole of Mahee Kanta, three of whom are paid from subscriptions by the Thakoors, and two by the Edur Durbar. Vaccinators paid by the Thakoors have allotted to them certain talookas belonging to the Thakoors, and the Edur country is divided between two vaccinators. But the territory of each Chief is more or less scattered, and with Government and Guicowaree territories there is such an interlacement of the whole that between one part of a Chief's Talooka and another part, portions more or less in extent of other Chiefs' territories intervene. The vaccinators are only allotted talookas of certain Chiefs, so they have frequently to skip over from one part to another; as a consequence, vaccination, far from being continuous and arm-to-arm, is carried on in a broken manner. It often happens also that certain portions, on account of difficulty of access, are entirely forgotten." To remedy these difficulties, a proposition for the re-organisation of the vaccination establishments of these two States has been lately submitted by me to the Political Officers, the main feature of which is the formation of a common vaccination fund for each of these States. The Princes and Thakoors who now pay for separate vaccinators are to contribute a lump sum annually to the Political Agency, the same to be not much above the present expenditure incurred by the said Chiefs and Thakoors. Upon the formation of such a fund the vaccinators and peons would receive their pay directly and regularly from the Political Officers, and there would be a certainty of all fines &c. being inflicted. The vaccinators who now receive nearly equal pay will also be graded after the model of the Government establishment, and they would be members of one common service, instead of as at present being servants of certain Chiefs only; thus any one might be transferred to another place, or could be lowered in grade for misconduct: good service could be rewarded by promotion without changing the district of the vaccinator, and in Mahee Kanta consecutive portions as far as the nature of the territory will permit, would be allotted to the several vaccinators. Whether a particular allotment comprises one or several Chiefs' territories would be immaterial; the vaccinator would have to vaccinate all villages that came within its limits. This would lead to more thorough vaccination than at present, and as fewer breaks in lymph would occur the work performed would be more satisfactory. Taking this opportunity of a new organisation of the Vaccine establishment of these territories, I have made a proposition for the entertainment of a Native Superintendent of Vaccination for each, as also for the providing of some money allowance to parents of children carried from their own to other villages for vaccination purposes. The Superintendent General of Vaccination has approved of my proposals, and I await with anxiety to know how these proposals will ultimately be disposed of.

Proposal to make a fund for vaccination in Native States.

Aid given by Revenue and Political Officers acknowledged.

13. Much valuable assistance has been received by the department from all the Revenue and Political Officers, for which I cannot close my report without expressing my best thanks.

SIND CIRCLE.

Superintendent.—Assistant Surgeon J. WILLIAMS, M.D.

Establishment.—17 Vaccinators under Government, 4 under Municipalities, 13 under Local Funds, 1 under a Native Chief, and 20 Dispensaries.

Population 1,745,000. Total cost, Rs. 23,833. Average cost of each successful vaccination, 5 annas 2 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully vaccinated.	Percentage of success, excluding those unknown.
			Increase.	Decrease.		
Government	1869-70	38,179	.....	.....	36,681	98·
	1870-71	48,599	10,420	.....	43,374	95·
Municipalities	1869-70	784	.....	.....	707	93·3
	1870-71	1,065	281	.....	955	95·
Local Funds	1869-70	22,981	.....	.....	22,085	99·1
	1870-71	30,466	7,485	.....	28,298	95·
Native Chiefs	1869-70	1,260	.....	.....	1,235	100·
	1870-71	1,757	497	.....	1,454	86·
Dispensaries	1869-70	10,304	.....	.....	9,413	93·
	1870-71	9,376	.....	928	8,378	93·

In the course of the year 1870-71, the Superintendent of Vaccination in Sind travelled over 4,372 miles. 36,699 vaccinated and unvaccinated persons were inspected in 518 villages, 23 schools, and 12 dispensaries. The expenses are greater than in the preceding year on account of the Superintendent being ordered to Guadur to further vaccination in Beloochistan, and to Bombay to learn the method of practising animal vaccination.

The foregoing remarks are by Dr. Roche who took over charge from Dr. Williams. Before Dr. Williams went home, on the 10th March, he left the following remarks on record in the office.

General progress.

Vaccination has progressed favourably in Sind during the past year. In the hot season there was considerable sickness amongst the vaccinators, the result probably of exhaustion by malaria in the previous season; but the men have worked so well since the cold season set in, that

I have very little doubt they will have brought up the number of vaccinations to fully its usual average. The quality of the work done is excellent; as a rule they vaccinate in no less than eight places, so as to ensure a sufficient number of vesicles for thorough protection.

Vaccinators records' nearly absolutely correct.

2. The records of the men were found nearly absolutely correct, excepting those of Chelaram and Khayal Mull, who managed to make their returns incorrect in connection with revaccination. They were both dismissed, and the man Assanund was discharged on account of inability, through (pretended) sickness, to work in Lar.

No opposition to vaccination except in towns where Hindoos abound.

3. There is no opposition to vaccination anywhere except in the large towns; in fact the country (agricultural) people are very grateful for being protected against small-pox. The cultivators are chiefly Mussulmans; the Hindoos amongst them being comparatively few, offer little or no opposition to being vaccinated, but where the Hindoos are numerous, as in large towns, there the progress of vaccination is more or less arrested. The Hindoos readily acknowledge that vaccination saves them from an attack of small-pox; but that is the very reason they object to it: they look at small-pox from a religious point of view, and they apparently consider any interference with the cause of small-pox as tantamount to a sin.

Animal vaccination.

4. For this reason I consider that animal vaccination ought to be accepted by Hindoos. The cow is a sacred animal, and if it be the medium to protect them against small-pox, instead of being objected to, its value would *à priori* be enhanced. In order to lessen as much as possible the scruples of Hindoos or any other people against vaccination and to have a supply of lymph that the most fastidious might rely on, I suggested to the Commissioner in Sind that animal vaccination might be given a trial: he at once approved of it and pointed out Hydrabad as a desirable place, as having the advantage of being constantly under the supervision of the Civil Surgeon. But unfortunately Dr. Holmested objected to its introduction at Hydrabad, so we had to look out for another station. At this juncture I happened to fall in with Major Wallace, Acting Collector of Shikarpoor. I stated the whole case to him; he said he felt sure that Mr. Leahy at Sukkur would take it in hand, and the Sukkur Municipality would very probably vote sufficient money to carry it out. I am happy to be able to say that Mr. Leahy has most willingly undertaken the task, and that the Sukkur Municipality has most readily and munificently granted the money. Thus animal vaccination will obtain a fair trial in Upper Sind, where also it will have to withstand the severe ordeal of intense heat. My best thanks are due to both Major Wallace and Mr. Leahy for their hearty assistance.

Re-vaccination.

5. Re-vaccination has not yet had a fair start in Sind; the people do not see the use of it, neither do the vaccinators: those entered as re-vaccinations are for the most part primary vaccinations.

The vaccinators hunt up children of between five and ten years of age, and if they have no marks of vaccination and the parents say they have been vaccinated, the vaccinators operate upon them and enter the operation as a re-vaccination, which is almost invariably successful.

Dispensary Vaccination.

6. At the Dispensaries vaccination has been carried on perseveringly, but there was a decrease on the previous year of 928.

Deaths from Small-pox.

7. I am glad to be able to report a considerable diminution in the number of deaths from small-pox this year. In 1869 there was a total of 244 cases, whilst in 1870 there are only 121 reported, or less than one-half; again if we deduct from this 86 cases which happened at Kurrachee, not under my charge, the number is reduced to 35; from this I have a further reduction to make, for on my tour I found that the five cases reported from Oobaoro were not of small-pox but of measles: this brings the number under my charge down to 30, less than one-eighth the number reported last year.

The new form for death registers should have a column for measles.

8. In connection with this subject I beg to express my opinion that the latest form of death report should have a column for measles, or the consequence will be that cases of measles, or other skin disease will be entered as small-pox. This happens now, and I have had reports from Oomerkote, Meerpoor Buttora, Oobaoro, corrected from small-pox to measles. I trust Government will see the necessity for giving a column for measles and the other exanthematous diseases, as well as for small-pox.

Tour.

9. After my return from the Thurr and Parkur Districts I went to Upper Sind in April last, in company with Sir William Merewether, with the view especially of furthering vaccination at Jacobabad, which is the only town in which the Civil Medical Officer makes no attempt at vaccination. I was unable to reach Jacobabad, by a severe attack of fever following exposure to the sun, but the Commissioner did an immense deal towards inducing the people to be vaccinated, and one of my vaccinators (Kishen Chand), together with the first Assistant Superintendent, vaccinated many people in the town and camp of Jacobabad. I afterwards went to Guadur, and arranged measures with Major Ross for carrying on vaccination in Southern Beloochistan, but we have been prevented from carrying out those measures owing to Major Ross being away in Persia on a political mission. Later, I visited Bombay to learn the method of animal vaccination. In my cold season tour I marched along the Western boundary of the Kurrachee and Shikarpoor collectorates, through the districts of Jacobabad across to the Eastern boundary of Shikarpoor, then through Sukkur down the right bank of the Indus. I scarcely need say that I have travelled over a great extent of country and examined many children.

10. My sincere thanks are again due to Sir William Merewether, who has most cordially assisted me in every way. My thanks are also due to all the Officers in Sind, who have invariably given me every assistance.

KATTIAWAR CIRCLE.

Superintendent.—E. R. Butler, M.D.

Acting Superintendents.—Surgeons Shepherd and Blomfield.

Establishment.—9 Vaccinators under Government, 39 under Native Chiefs, and 2 Native Assistant Superintendents.

Population 1,580,240. Total cost Rs. 15,593. Average cost of each successful vaccination, 4 annas and 8 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully vaccinated.	Percentage of success, excluding those unknown.
			Increase.	Decrease.		
Government	1869-70	10,040	.....	.....	9,426	96·8
	1870-71	9,771	.....	269	9,084	95·0
Native Chiefs	1869-70	44,939	.....	.....	41,579	95·9
	1870-71	47,995	3,056	.....	43,970	94·0
Dispensaries	1869-70	1,315	.....	.....	1,315	100·0
	1870-71	159	.....	1,156	149	93·7

Dr. Butler went on leave in the early part of April 1870, and I (Mr. Blomfield) took charge of the duties, as he did not return to Kattyawar. I continued in charge until the 29th of September, when Mr. Shepherd was appointed and continued in charge until the 26th of March 1871, when he left for Bombay, giving charge of the office to Vaccinator Runchoredass.

2. During the time I was in charge I was unable to leave Camp, and therefore saw only those cases vaccinated in the station and town of Rajcote. Those children that I inspected presented large and well-formed vesicles, the lymph being of excellent quality.

Number of Vaccinators.

3. Thirty-nine vaccinators have been entertained by the Chiefs of the province, which is two more than last year. Nine have been paid by Government, one who was the Station vaccinator, having been transferred to this establishment.

Conduct of Vaccinators.

4. In looking over the monthly returns I see that the conduct of the vaccinators has generally been favourably spoken of, with the exception of Assistant Vaccinators Shaik Shumshere and Pragjee Anundjee, of the Government establishment, both of whom have been reported as lazy and have been fined on that account. Two Chiefs' vaccinators were discharged for sending in false returns, and one took his discharge on his own account. All have been replaced.

Small-pox.

5. Small-pox was reported to prevail in Manickwara in March, and I have heard of its being in the villages in the neighbourhood of Rajcote.

6. The Talookdars in the neighbourhood of Rajcote have complained that since the transfer of the Station vaccinator no one has visited their villages for the purpose of vaccinating ; this work will probably be done during the monsoon, when the Superintendent is in Rajcote.

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon T. Cody.

Establishment.—Five Vaccinators under Government, ten under Native Chiefs, and one Dispensary.

Population estimated at 700,000. Total Cost Rs. 7,892.* Cost of each successful vaccination 7 annas and 3 pies.

Establishment.	Years.	Total Vaccinated	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success, excluding unknown.
			Increase.	Decrease.		
Government, Punch Mahals	1869-70	9,476	.....	.....	8,975	·96·7
	1870-71	6,496	.....	2,980	5,792	93·5
Native Chiefs.....	1869-70	10,166	.....	.....	9,192	94·9
	1870-71	12,658	2,492	.....	11,541	95·1
Dispensary.....	1869-70	.....	.....	.....	.....	.....
	1870-71	116	116	.....	94	82·3

Decrease in the Punch Mahals.

This table exhibits a large decrease this year, on the preceding one, amongst the Government vaccinators employed in the five talookas comprising the Punch Mahals. The decrease, though a large one, was to be expected in some measure, inasmuch as the year 1869-70 was quite an exceptional one as regards vaccination in these districts, and the returns for it were swelled to an extent not attainable in the ordinary course of things. The chief cause for this large increase in the returns for 1869-70 was an influx of immigrants who that year sought refuge in the Mahals from the famine-stricken districts of Marwar, and they, being mere birds of passage, could only affect the returns for the one year alone, as they returned to their own country on the cessation of the famine. My predecessor, Dr. Welsh, too, stated in his report for 1869-70 that a large amount of arrears of

* This includes pay of Superintendent from the month of September 1870.

work had been got through that year, and that he did not consider it probable that the returns would attain their then dimensions in the subsequent or any succeeding year.

2. Again the year itself under report has been an exceptionally bad one as regards vaccination in these districts, in consequence of the very unhealthy condition of the circle for two or three months subsequent to the close of the monsoon; and I do not believe it could, from this cause, contrast favourably with the one preceding it as regards numbers, even in the absence of the large number of operations performed amongst the children of the immigrants that augmented that year's returns to such an extent. During the months of October, November and a portion of December, malarious fever raged to such an extent that work was partly at a stand-still throughout the Circle, and very nearly completely so in one or two districts of the Punch Mahals. A good many of the vaccinators were incapacitated by it; and those who were able to carry on their work could not procure children to operate on, in consequence of the extent to which they, as well as their parents, suffered from fever. When these two facts are considered I think the wide difference between the total number of operations performed in the Punch Mahals this year and last is not to be wondered at; and there is no reason to infer, as might be done from the large decrease in the Government establishment, that vaccination is becoming unpopular or the vaccinators less energetic in the performance of their duties.

Increase in Native States.

3. Looking at the returns from the Native States, or the Rewa Kanta proper, it will be found that there has been an increase in the number of operations this year to the extent of 2,492. This increase is due to an increased number of vaccinators who, with one exception which shall be mentioned hereafter, have been working steadily throughout the year; and also, and I think more immediately, to the great interest taken in vaccination by Major Barton, the Political Agent. It is chiefly owing to his exertions on its behalf that vaccination has made such steady and sure progress in the States for which he is Political Agent, and entirely due to his representations to the Chiefs that they have thus diffused the benefits of the prophylactic amongst their subjects. Without his co-operation the Superintendent could do very little towards the extension of vaccination in the Native States, and, as far as I am concerned, I have never had to ask a second time for his assistance whenever I required it.

4. Taking the Circle as a whole, and considering also the total number of re-vaccinations, I think vaccination may be fairly said to have held its own for the year 1870-71.

Vaccinators.

5. There were fifteen vaccinators in all employed during the year, of which number five were employed by Government, and worked in the Punch Mahals, and the remaining ten by the Chiefs of the States of the Rewa Kanta.

Government Vaccinators.

6. There was no change in the Government establishment during the year; but in three instances there was a break of work that materially affected the returns. In two cases the break occurred as a result of illness—one man having had to take a month's sick leave, and in the other the Dohud vaccinator, who also acts as Karkoon in my office, was taken for four months off his work in consequence of his having to accompany me on my tour. Fines were inflicted in a few instances, there being no case of misconduct calling for a more severe punishment.

Native Chiefs' Vaccinators.

7. In the Native States two changes occurred, one in Rajpeepla consequent on the death of one of the vaccinators employed there, and the other in the Soonth and Kuddana States by the dismissal of the vaccinator for being absent without leave. In the former case the man died on the 5th of November, but must have been seriously ill for some time previously, as I found, on examining his records (for which purpose I went to Nandode) that he had performed no work after the month of July. In consequence of the defective means of communication with this State, or more properly I should say the apathy and indifference of the Durbar, I was not made acquainted with this man's illness and demise until the end of December, and I was not able, with every effort I could use, to have a successor appointed until the 1st of February last, so that there was a break of work of six months in that portion of the State where he was employed, and during this time the Durbar did not take the least notice of, or exhibit the slightest anxiety about this cessation of work. In the other case there was no break of work as I appointed a successor immediately on the man's dismissal. Fines were imposed in, I must say, a good many instances, but they were all for offences of no very great importance.

8. Taking the vaccinators altogether, both in the Mahals and Rewa Kanta, I cannot say more of them than that their conduct was "fair" during the year, and there was no particular distinction on the part of any single one of them, since I joined the appointment at least, that would warrant my bringing forward his name for special notice.

Dispensary.

9. In the month of October a dispensary was opened at Godra, and *pari passu* with the other duties of it the Sub-Assistant Surgeon in charge began vaccination. Since then it has been working very steadily, so much so that I consider it quite able to meet all the requirements of Godra town as far as vaccination is concerned, and I have consequently directed the vaccinator of that talooka to confine his work altogether to the district villages and leave the work of the town of Godra to be performed by the Medical Officer in charge of the dispensary.

Lymph and Vesicles—Animal Vaccination.

10. Shortly after receiving over charge of the appointment I determined to introduce animal vaccination, and thereby supersede the lymph I found in use by a supply fresh from the original source. I did not form this resolution as a consequence of

any defect I found in the lymph itself, or any inferiority it seemed to me to possess over the lymph I have seen in use in other Circles; but did so merely in conformity with a firm conviction I hold of its protective properties being capable of deterioration by being too humanized. Indeed the vesicles I saw here were just as good and as characteristic as any I had previously seen resulting from the use of human lymph; and the lymph they contained appeared to me so pure and good that I should have been loth to replace it had I not been so thoroughly satisfied as I am of the superiority of that recent from the heifer.

11. In asking for animals for inoculation I at first found some difficulty in obtaining them, as the owners required some remuneration for the loan of them, and I had no funds at my disposal for the purpose. On bringing this matter to the notice of Mr. Jervoise, Agent to the Governor Punch Mahals, he readily assented to give me every aid from the Local Funds, and placed at once at my command Rs. 100 from that source to meet any expenditure that might occur consequent on the introduction of animal vaccination. This sum has been quite sufficient to meet all the requirements under that head; and has enabled me, so far, to renew all the lymph in use in the circle, besides leaving a good balance to meet future contingencies of a similar nature.

12. I do not intend entering into a full and detailed description of the manner in which I performed the inoculations on the different calves I selected for that purpose, as such a description would entail an amount of unbecoming egotism without serving any practical end. Suffice it to say that I performed the operations, without the slightest variation, after the method which I learned from Dr. Blanc, Superintendent of the Western Circle, in Poona, last rains, who also kindly sent me on application a supply of animal lymph to commence work with. Since I performed the first inoculation in the month of October last, I have kept up the supply of lymph steadily, with some few breaks, of longer or shorter intervals, during which time tubes were kept, charged from the vesicles on the last inoculated calf, up to the present time. All my inoculations have not, however, been successes, far from it; neither have the vaccinations I performed, from what appeared on the heifer rich, first class vesicles, proved effective in every instance. The uncertainty of the effects of the lymph in many cases was, to say the least of it, embarrassing, the more so because unaccountable. One instance of this uncertainty was so remarkable that I must relate the details of it here, even in face of the resolution I have just stated of excluding all such details from this report. At Rampoor, in the Soonth State, I vaccinated 11 children from a calf I brought on with me from Jhallode, making two points on either arm of each child, thus giving altogether 44 points on the 11 children. The vesicles on the calf were good, and gave to all appearance every promise of the vaccinations being successful. Such was not the case, however, for on the 10th day only one vesicle appeared where I expected to find 44; and on the remaining 43 points, all of which I carefully examined, there was in no single instance the slightest approach to the formation of

another. The vesicle was so good a one that I had 3 children, on whom the animal lymph failed, vaccinated from it, making 6 points on each, 3 on either arm and on the eighth day after, the vaccinator, to whom I gave strict injunctions to watch the results, reported that 17 vesicles had appeared amongst the three children, and that they were so large and good he took all the lymph he could from them to work with, leaving, at the same time, his previous lymph to die out. This is the most striking instance I experienced of the uncertainty of animal lymph when used direct from the calf; but when transmitted in tubes I have invariably found it inert when applied to the human subject, so much so that I now always supply it to vaccinators, after the first transmission, when they require their lymph renewed. By this means I have supplied every vaccinator in the Native States with fresh lymph, and they all report favourably of it. In the Punch Mahals I have at different times inoculated calves and from them vaccinated children in each separate talooka, so that the vaccinators are now working with lymph to the purity of which I can testify from personal observation, as well as to the richness of the vesicles it produces. Each of the Government vaccinators has been instructed how to perform the operation on the calf, as has also the Sub-Assistant Surgeon in charge of the Godra dispensary, and one of them, assistant vaccinator Jaithalall Gunputram, who acts as office clerk, has become quite an expert at it, so much so that I would now have no hesitation in entrusting him with the performance of it on his own account.

Popularity of animal vaccination.

13. That animal vaccination is more or less popular in these districts, is, to my mind, beyond all doubt. In the first place, it would set at rest,—were it possible to have depôts in the different districts containing animals with a supply of lymph every sixth day—one of the greatest objections the people have to getting their children vaccinated, the fear of having to give lymph back again for the use of others. This prejudice is so strong amongst some people that I have seen a man object to have the lymph taken off the arm of one of his own children to vaccinate another, and that too so strenuously that he had to have his way, though he had not the slightest objection to (in fact earnestly requested it) have his unprotected child vaccinated with lymph from the arm of a stranger. This fear of having the lymph taken off their arm is the chief, or I should say only, cause of the large number of scratched vesicles one sees, and altogether accounts for,—far more frequently than the use of bad lymph to which I have often heard them attributed—the ragged-looking cicatrices so familiar to every superintendent of vaccination. Could the necessity for taking the lymph from the arms of children be removed there would be little doubt as to the advance vaccination would make in popularity; and there would be fewer instances of scratched vesicles leaving nasty sores instead of neat round scabs. But in the absence of any means of doing away with this necessity we have only to trust to time and the schoolmaster to remove the objections parents have to allow lymph to be taken from the arms of their children. Again there is a mystery about animal vaccination, to some extent, that enhances its value fourfold in the appreciation of ignorant minds. To them a thing that is

simple and easily seen is partly devoid of attraction, while that which is mysterious and incomprehensible obtains a certain amount of respect and attention. This fact I have seen exemplified in Dohud, where a class of people, who usually affect to despise vaccination and are not usually seen at the vaccinator's rendezvous, came to me with their children as soon as they learned they would be vaccinated direct from the cow. Altogether the practical deductions I have drawn from the use of animal vaccination, are :—First, by its means the value of vaccination as a protective agent against small pox is somewhat enhanced ; and secondly, it renders vaccination less distasteful to some, and generally speaking more popular.

Returns.

14. Glancing at the returns it will be found that of a total number of 18,516 primary operations, 9,237, or 49·8 per centum, are males, and 9,279, or 50·2 per centum, are females. This preponderance of females over males takes place altogether in the Rewa Kanta, for in the Mahals the figures stand, males 3,065, females 2,937, or 51·065 and 48·935 per cent. respectively; while in the Rewa Kanta the percentages are males 49·3, females 50·7. I am not prepared to give a reason for this preponderance of females over males in the Rewa Kanta ; but I may not be out of place in offering it as a strong proof of the absence of female infanticide in these districts. As regards caste, Hindoos comprise 89·9 per cent. of the total number of operations ; they also form the larger portion of the population. There are, however, some very large Mussulman communities, but I regret to say that vaccination seems to make very little way amongst them ; and, from their intractable natures, there is little reason to hope for an improvement for some time at least. Amongst the Bheels, vaccination is going on very steadily ; and there is now an amount of protection amongst them that bids fair to lessen any apprehension about small-pox epidemics. The percentage of infantile operations, as compared with those of childhood and adolescence, is small, being only 29·4 against 70·4, both calculated on the grand total. This great difference is chiefly amongst the Rewa Kanta vaccinators, as in the Punch Mahals the number of infantile operations bear a far greater proportion to the total, being 44·3 per centum. I think I may safely say these figures are correct, for I took particular care, while making my inspections on tour, to test as far as practicable the accuracy of the vaccinator's returns as regards age. It is to be regretted that the number of infantile operations are not proportionately greater in the Rewa Kanta ; but the vaccinators have a great deal to contend with there in the popular objections to have children vaccinated below a certain age ; I have no doubt but that in time they will be able to overcome these objections and bring the figures to nearly the same as in the Punch Mahals.

Re-vaccination.

15. The following small table will give the result of re-vaccinations during the year :—

	Results.			
	Successful.	Unsuccessful.	Unknown.	Total.
Punch Mahals	243	180	71	494
Rewa Kanta	90	44	10	144
Total.....	333	224	81	638

This table shows a certain amount of popularity for re-vaccination in the Punch Mahals, while it does not seem to make head in the Rewa Kanta. Chiefly, I imagine, from the large number of primary operations there are still left to be performed in the latter portion of this circle. The percentage of success, 59·7, excluding unknown, shows that there are good reasons why the operation should be favoured; and incontestibly proves that, if not an absolute necessity, it is, at least, a wise precaution.

Tour.

16. I was on tour for the four months of December, January, February, and March; but as the particulars of how I was employed during the time are summarized in the employment and inspection returns accompanying this report, I will not do more here than give a general detail of the vaccinators and their work as I visited each. In October and November I examined the work of Assistant Vaccinator Jaithalall Gunputram, who is constantly stationed in Dohud as he has to do the vernacular work of the office. He was working with the animal lymph, which gave very fine vesicles. His returns were correct and his register neatly kept. In December I visited at Jhallode Apprentice Vaccinator Pursotum Dyaram; at Godra Vaccinator Ballajee Purburam; at Kallole Assistant Vaccinator Mahashunker Cassiram, and at Hallole Apprentice Vaccinator Dajee Kaiwulram. With the first man I found the returns and register quite correct; but they were kept so slovenly that I had to fine him and give him a severe reprimand for what was evidently the result of pure carelessness. With the second man I found a mistake in one of the monthly returns, he having entered as successful a name that should have been entered as unsuccessful. This he explained as a clerical error, and on examination I found such to be the case, as the name was properly entered in his own register. As this was the only mistake I discovered, after a searching examination, and as I was otherwise satisfied with the neatness and order of his register, I let him off with a warning to be more careful in future. His lymph was good, but I nevertheless replaced it by animal lymph. The third man had just returned from sick leave when I visited him, and had no lymph, it having been lost during his absence. I started it again for him by vaccinating a number of children at Weizulpoor from a calf. What I saw of his previous work satisfied me, and his returns were correct.

The fourth man I found just recovering from a fit of illness, during which time his lymph went bad. I started it again for him by vaccinating some children from calves. His previous work was satisfactory, and his returns were correct. In the month of January I examined the work of the Sunkeira Meewas' vaccinator, went to Nandode in Rajpeepla to look after the duftar of the late vaccinator Fukhur Mahomed, deceased, and see what returns, if any, he had left; the work &c. of the Chota Oodeypoor vaccinator, the two Barrea vaccinators, and some old work of General No. 253. I was satisfied with the work and the correctness of the returns in every case. In the month of February I again examined the work &c. of the Jhallode Vaccinator, and that of the man employed by the Soonth and Kuddana States. In the former case I was satisfied with the work, as also with the improvement made in the keeping of his register. In the latter case I found the man absent without leave, for which I had him dismissed, giving his place at the same time to a candidate whom I found in charge of his work. Both in Jhallode and Rampoor I vaccinated a number of children with lymph from the heifer. In the month of March I examined the work of both the Loonawarra vaccinators, that of the Ballasinore vaccinator, and some old work of the Godra vaccinator. I found the work good and the returns correct in each instance. After this I returned to Dohud, having visited and inspected the work of every vaccinator in the Circle, with the exception of the two Rajpeepla men, who shall however, be amongst the first to be inspected next year.

Small-pox.

17. I have received no returns of small-pox during the year, and from their absence and the non-receipt of any reports, with one exception, of its appearance, I am inclined to the belief that the Circle has had a comparative immunity from the disease this year. The exception was a report I received in the month of November from Jambooghora, where it was said to have broken out. I immediately directed the Hallole vaccinator to proceed there and commence work, and from his reports I gather that there were only a few sporadic cases and that it again disappeared without assuming the form of an epidemic or spreading to the neighbouring districts. I got no other report of its presence, and did not notice any evidence while on tour of its having appeared amongst the people, though I travelled through the greater part of the Circle.

Dispensaries.

18. There are two dispensaries in this Circle, one at Godra supported from the Local Funds, and the other at Barrea supported out of the revenues of that State. The Godra dispensary is in charge of a Sub-Assistant Surgeon, and was opened for the treatment of patients in October last. It is very nicely situated, being built on an isolated knoll on the banks of the river. As a building it is both compact and solid, but is, I venture to submit, somewhat unsuited for the purpose of a dispensary. However, some improvements I believe are in course of consideration, and amongst others the erection of a ward for the reception of in-patients, which will render it more adapted to the requirements of a large place like Godra. I found it well supplied with medicines and instruments,

which were well arranged and kept. The books and records were all kept in a most neat and orderly manner, and reflected the greatest credit on the then Sub-Assistant Surgeon, Mr. C. Pestonjee, for his tidy and business-like habits. The daily average attendance was between 40 and 50, with every prospect of an increase to that number as the fact of its existence becomes more generally known. Mr. Pestonjee resigned the service in March, and was succeeded by Sub-Assistant Surgeon Suruplall Balluckram. Since the change I have again had an opportunity of examining the dispensary, and am quite satisfied that it will lose nothing while in charge of the present incumbent. I visited the dispensary during the hours of attendance, and was much pleased with the amount of attention Mr. Balluckram paid to his cases individually; and the fair knowledge he seems to possess of medicine. Being his first independent charge he is naturally a little diffident, but I have no doubt he will do much better as he gradually attains that confidence in himself which time and experience can alone give. The Barrea dispensary is in charge of an ex-Hospital Assistant; and at present occupies a house in the Bazaar. A building however is in course of erection for its reception, and when completed will be a very compact one of its class. When passing through Barrea on my tour I examined this dispensary, and was very well satisfied with the neatness and order with which both medicines and instruments were kept. The daily average attendance appeared to be about 50. No vaccination was carried on in connection with it, heretofore, but by permission of Major Barton, I have directed the Hospital Assistant to commence vaccination, and sent him lymph for that purpose. The getting up of this dispensary was altogether the act of the Political Agent, who saw and felt how necessary something of the kind was in a place so unhealthy. I believe that it is in contemplation to establish a dispensary also at Loonawarra, where it is very much required.

Sanitation in Towns and Districts.

19. While on tour the fact came very forcibly to my notice what an amount of suffering and mortality might be staved off by some one with power to enforce a few of the simplest rules of sanitation. I speak chiefly of the rural population, and the villages and hamlets they inhabit, amongst whom there was an amount of sickness in the past year, extraordinary even in these unhealthy districts. As I said in an earlier part of this report, for the few months subsequent to the monsoon the people suffered from malarious fever to an extent previously unknown, and it was fatal to such an extent that, in one small village of about 25 houses, I was told thirteen children died from it in about two months. The presence of the fever is easily accounted for by the late and increased fall of rain, and the superabundance of rank vegetation produced by it, and can scarcely be helped, as long as cultivation is as confined as it is. But that the people should suffer to such an extent from it is remediable, and might I think be easily managed if they could be only induced to keep the spaces around and between their houses free from this rank vegetation. In the scattered Bheel villages this would be no very difficult task, as most of the houses are either detached or semi-detached, and they are generally speaking by the end of the rains partly hidden from view by the rank

overgrown weeds that seem to bury them in every direction. One can easily fancy what would be the result of these weeds being left to swelter in a fierce October sun; and how dangerous to existence must be the atmosphere impregnated with their effluvium. I think myself their removal and suppression would tend materially to lessen the amount of sickness in these districts, together with some attention to the drinking water. What I would suggest is—1st, to have a mud wall round the houses or villages at a distance of say from 50 to 100 paces, and allow no growth whatsoever inside this wall; and 2nd, have the wells cleared, and kept so, of all vegetable debris and allow no surface drainage to escape into and fill them while the rain is falling. The sanitary arrangements in the larger towns of the Punch Mahals are very fair and are as good as could possibly be attained, all things considered. In the Rewa Kanta the towns of Barrea and Loonawarra have been drained, and had streets constructed, and are as to sanitary arrangements very much improved, more especially the former.

PRESIDENCY CIRCLE.

Local Superintendent.—Sub-Assistant Surgeon ANUNTA CHANDROBA, G.G.M.C.

Establishment.—6 Vaccinators (Government) from 1st April to 30th November 1870, and 11 Vaccinators (Municipal) from 1st December 1870 to 30th March 1871.

Population 816,562. Total cost Rs. 8,145. Average cost of each successful vaccination 15 annas and 3 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of Success.
		Increase.	Decrease.		
1869-70. Government.....	9,222	.....	.....	6,002	84·0
1870-71. ... Government	7,166	.....	2,056	8,510	86·0
1870-71. ... Municipal ...	4,580	4,580	.....		

Preliminary observations.

The past year has been, in every way, a busy one. A system of domiciliary vaccination has been inaugurated which, if carefully and patiently carried out bids fair to render vaccination popular. It has been the burden of our annual reports, from year to year, that the greatest obstacle in the way of the spread of vaccination is the want of a sufficient quantity of good lymph, consequent on the extreme unwillingness of all to allow lymph to be taken from the succesfully-vaccinated children, and this acts injuriously in a threefold way. 1st, It prevents persons, not wanting in confidence in the protective influence of vaccination, from getting their children vaccinated, for fear of their being required to supply lymph from them. 2ndly, To escape being used as a vaccinifer,

many parents destroy their children's vesicles. This is doubly mischievous. It not only robs us of lymph, but lessens the protection to a child; and should in the course of events this particular child become attacked with small-pox, blame is laid at the door of vaccination, more especially should the attack prove at all dangerous or fatal—when also the wrath of the offended and incensed "Shitala" is supposed to be brought into play. The mischief resulting from this is not at all so trifling or uninfluencing as one might at first sight be led to suppose. It is fraught with serious consequences, and must always be viewed with apprehension and solicitude. And 3rdly, as a result of the foregoing, lymph cannot be secured in quantities to vaccinate all the applicants.

2. I have stated at the commencement of the present report that during the past year a system of domiciliary vaccination has been inaugurated which, if carefully and patiently carried out, bids fair to render vaccination popular, and to greatly extend its benefits with the least possible trouble to all concerned. It has been in this wise: After repeated failures of heifer after heifer, I succeeded towards the middle of December in once more re-establishing animal vaccine lymph. This continued to give more or less favourable results, till during the last two months not a single heifer proved a failure. The success was not confined to producing the disease in the heifers only, but the lymph derived from them produced beautiful vesicles in the human subject also. The ample resources at our command from the grant of that great Parsee philanthropist, Mr. Cowasji Jahangierji, C.S.I., and that also from the Municipality, gave us the means of buying heifers in numbers; and we inoculated from 10 to 15 or more every month; thus giving us a handy store of pure and effective lymph in great abundance, for almost every day's use. I had besides a large staff of vaccinators and peons given me by the Municipality, and with their assistance I was enabled to carry these heifers—to convey this handy store of excellent lymph, from district to district—nay almost from street to street, and to vaccinate children by scores almost without a single failure; besides working at the usual morning stations, of which there are six, one for each of the week days. Though there was no regular station established for Sundays, our lymph was too valuable to be lost for that day: and as small-pox was also found to make head towards the end of the year, we could not but utilize every drop of our lymph and every moment of our time. We therefore worked on Sundays as well as on other days. During these peregrinations, I have had everywhere confirmation of what I have said before. Persons, instead of taking advantage of our presence at their very door as it were, and coming in numbers, were found to try hard to conceal their children—run away with them, or shut themselves up in their houses. The presence of our vaccinators and their peons was the sign for a general stir and bustle; and women would be seen running about here and there, their children in their arms covered in under the end of their dress, and trying hard to find a place of refuge. Not that they had no confidence in vaccination, on the contrary, many of them were known to bring their children all the way to a distant station, some five or six miles from their homes and to show an amount of earnestness and anxiety about getting them vaccinated that they would not hesitate to offer a small reward to the vaccinifer to allow lymph for

their use. The object of their going to a station in preference to being operated on at their own houses is to prevent the unwelcome inspection visits of the vaccinator for fear he should take lymph from their children's arms; the more distant, therefore, the station, the better suited it is for their purpose of concealment. No amount of assurance on our part to respect their scruples and leave them unmolested could reassure them. They were perfect strangers to animal vaccination. Long experience had taught them that we had no alternative but to take lymph from successfully vaccinated children to keep vaccination going, and they would not believe that we could get a sufficient supply of lymph from heifers.

3. The same fear that makes the people prefer station vaccination, makes them give us false addresses. This gives our vaccinators a considerable amount of unnecessary and useless trouble; many ultimately remain unseen, and their results consequently, unknown. Ignorant and illiterate as they generally are, they cannot very well be blamed for this natural anxiety to save their children the pain and themselves the trouble and annoyance of going all the way to the station, and being detained there for some time. I beg to go even beyond this, and assert that something much worse than pain is often the result of the taking of lymph from a child. They cannot be made to understand that the very safety of their children which they so much desire and are anxious for, requires that the result be seen by persons competent to judge of the success or failure of the operation. They have seen perhaps their own children vaccinated, and whether seen or not by the vaccinator afterwards, they have been all the same protected from small-pox. This is their experience; and it is enough for them to know that, irrespective of the vaccinator seeing the result, vaccination does protect, and has protected many. They do not care to know more. The progress of the vaccine vesicles in successful cases of vaccination, is very often chequered owing to the carelessness and inattention of the parents; but notwithstanding all this, the protection given by vaccination must have been very great to have so much secured the confidence of the people. This is a cheering and hopeful sign, and by and by, should I continue to succeed in obtaining with our animal lymph similar results to the present, I hope and fully expect to be able to inspire still more confidence, and make them as anxious to have the result ascertained as they are now for the operation. For the same experience that makes them now view with suspicion and distrust all the movements of the vaccinators, will convince them that their scruples and prejudices are really respected, and no harm possibly comes by bringing the child for the inspection of the vaccinator.

4. For all this however, I would still urge the necessity of a compulsory Vaccination Act. For it will take time before the general public is fully reassured, and during this time many valuable lives will unnecessarily be sacrificed. Besides, except in the fisherman caste, better known as Kolies, the Act will not exert any pressure upon any body, at least pressure that would be felt as a grievance or as an encroachment on the liberty of the subject. The Act will simply have the effect of stimulating them a little, rousing them from their natural apathy, indifference, and improvidence, as the

presence of small-pox itself always does, and force them to take in time the step which possibly through procrastination they would delay till too late to be of any use. The fishermen have all along, to a man, refused to accept vaccination ; they are located in places thickly populated by other classes, and are very filthy in their habits. Their places are the very hotbeds of diseases of a contagious nature ; and small-pox finding a ready field attacks them mercilessly, and each attacked person becomes the focus and frightful source of effluvium, which is rapidly disseminated all around, and attacks the poor neighbours who, though desirous of getting their children vaccinated, are so surprised by the sudden and unexpected presence of small-pox amongst them, that their energies become completely paralyzed. Besides the presence of small-pox revives in them the sleeping embers of old superstitions and prejudices respecting this disease. Small-pox is no less a personage than that terrible goddess "Devi," whose dread presence is made known in the shape of the eruption on the skin. To do ought to thwart or obstruct her proceedings, is to incur her displeasure, and any thing is welcome but this calamity. When, therefore, small-pox has made its appearance in a house, all the unprotected persons residing therein, whether members of the same family or not must remain unprotected till the fiat of the dread Deity goes forth, and is made known by the persons either contracting the disease, which is very often the case, or remaining unattacked till the 22nd day after the first appearance of the variolous papules in the first attacked person. On this day the attacked person is taken with great pomp and ceremony to the temple of "Shitala," the guardian Goddess supposed to have a mollifying influence on small-pox, and for whose propitiation vows are taken during the progress of the disease, which are made good to her on this day. The particular ceremony of the occasion having been gone through, the company return and feast, and from that time, the unprotected, if any, are at liberty to get themselves vaccinated. There are not wanting those who, foolish-like, go the absurd length of abstaining from vaccination, should small-pox appear even in the lane in which they reside. How vitally important then it is, to see that all the unprotected are vaccinated in time to be spared all after bad consequences, difficulties and annoyance. Compulsory vaccination alone can do this. As it is, already a year has been allowed to pass without taking any active steps in the matter ; and that terrible, yet preventible scourge of humanity, has been permitted to number among its victims some 556 precious lives in the year 1870.

Prevalence of small-pox.

5. Small-pox has been present more or less all through the year. It was at its acmé in April and May, when it carried away 122 and 130 persons respectively ; from June it began to decline, till in January 1871 there were only 6 deaths from this cause. From February, however, it again began to make head, and in March 1871 numbered as many as 61 victims. Altogether there were 556 deaths from small-pox during the course of the year 1870, a number certainly but one-third of what it was during 1869, but yet considerable enough to make one feel concerned at such a loss of human life.

6. Though small-pox prevailed all over the Island, the number of deaths varied very much in the different localities. The following table shows the different districts and sub-districts, with their populations as ascertained by the census of 1864, and the number of deaths that took place in them from small-pox during 1870:—

Names of Localities.	Population.	No. of Deaths.
Colaba.	19,161	20
Fort, Northern.	2,455	27
Fort, Southern.	39,258	
Esplanade.	7,869	1
Market.	75,402	51
Mandavee.	41,152	52
Chukla.	41,442	82
Oomberkady.	63,020	77
Dongree.	60,259	31
Dhobitalao.	71,795	18
Fareswadee.	22,529	6
Buleshwar.	50,282	21
Kharatalao.	23,454	19
Kumbarwada.	23,085	11
Ketwadee.	29,177	6
Girgaum.	21,505	6
Chowpatee.	6,184	2
Walkeshwar.	10,094	4
Mazagon.	21,784	17
Tarwadi.	9,462	4
Kamatipoora.	81,675	36
Parel.	7,002	14
Sewree.	5,042	14
Sion.	12,078	5
Mahim.	19,450	5
Worlee.	10,211	10
Residence unknown.		17
Total.		556

It will be seen from the above that there are certain parts of the Island wherein the mortality from this disease is greater than in the others, and this irrespective almost of the number of the population in each. Thus, Chukla, Oomberkady, Mandavee, Market, Colaba, Worlee, and Sewree are the places where the mortality from small-pox is either absolutely or comparatively the greatest. Chukla, with its population of only 41,442, had 82 deaths, the largest number in the locality; Oomberkady with a population of 63,020, had a mortality of 77, and Mandavee of 52 in a population numbering only 41,152, whilst Kamatipoora, Dhobitalao, Dongree, Bhuleshwar, and Khetwadee, with 81,675, 71,795, 60,259, 50,282 and 29,177 of population had only 36, 18, 31, 21, and 6 deaths respectively. And this is very easily accounted for. An experience of nearly thirteen years has now convinced me that the influence of the Vaccine Department on the first mentioned places is most insignificant, and this is owing to the character and status of the persons residing there. You have here, the rich Khojas and Memons, the Bhatyas and Lohanas, the Boras and Mahomedans generally of all shades and degrees of rank and position—ranging from the richest merchant and millionaire, down to the poorest mendicants and fakeers. The Bhatyas and Lohanas, though an intelligent and very enterprizing race, are still bigotedly superstitious and orthodox; and do not avail themselves of the blessing of vaccination to the extent that their Bunya neighbours of Guzerat do; though even these latter are, in this respect, far behind their co-religionists of the Concan and Deccan. Our vaccinators and peons can persuade

and coax the poor Hindoos, Concanees and others into bringing their children to the station to be vaccinated. Not so, however, with the Deccan Ghatees, who will not be persuaded readily. The Mussulmans also neglect vaccination, and in consequence suffer much from small-pox and die in numbers. A mortality of 174 out of 556, or a percentage of 31·3 in a population only one-sixth of the whole of Bombay, is not a trifling matter. There were 1,822 Mahomedans vaccinated during the year, mostly at the station.

7. Sewree, Worlee, and Colaba also stand prominently in regard to their number of deaths from small-pox. Worlee, a small out-of-the-way place, having a population a trifle more than Mahim, near which it is situated, has a mortality double that of Mahim; whilst Sewree having only one-fourth the population has a mortality almost three times as much as that of Mahim; and Colaba with an equal population, has four times as many deaths. But this will not be wondered at when it is known that the greater part of this mortality was amongst the fishermen, who inhabit these places in great numbers.

8. Patient perseverance no doubt will be able to achieve much. With abundance of animal vaccine virus we will be in a position to cope with small-pox and obstacles to vaccination with better hopes of success than heretofore. The introduction of the Compulsory Vaccination Act, would however have given the death blow to all unreasonable opposition, and would pave the way for the speedier extension of vaccination.

Increase.

9. During the year under report, 11,500 vaccine operations were performed, besides 246 re-vaccinations, being an increase in the primary vaccinations alone of 2,278. The increase was chiefly owing to our having abundance of vaccine lymph always ready at hand, and to our being enabled to carry on door to door vaccination.

Sex, caste and age.

10. Of the primarily vaccinated, 6,729 were males, 4,771 females; 853 Christians, 7,962 Hindoos, 1,822 Mahomedans, 703 Parsees, and 160 of other castes; 3,833 under, and, 7,667 above one year old.

Result.

11. Of the total primary operations, 8,358, or a percentage of 86·68, were successful; 1,284 unsuccessful; and in 1858 the result was unknown, as the persons operated upon could not be found afterwards. The percentage of success is a little more than in the previous year, and would have been still greater, if the repeated failure of the animal virus during the first half of the year had not contributed to swell the number of failures.

Re-vaccination.

12. Almost all the re-vaccinations performed during the year and which amounted to 246, were performed with the lymph from the cow direct. Of these 152, or a percentage of 66·3 proved successful; 77 failed; and in 17 the result could not be ascertained.

13. Our lymph was of very good quality throughout the year, and especially so during the latter half, when human lymph of first transmission from the cow gave us vesicles scarcely equalled, except perhaps, by the vesicles we were in the habit of seeing during the first three months after the introduction of animal vaccination here. Indeed, my experience of the past 15 months has shown me that the first and even second transmission of human lymph is if anything more active and energetic in its effects in the human subject, and produces larger and fuller vesicles than the lymph taken direct from the cow. In former years it was constantly observed, that during the hot and rainy seasons vaccine lymph here showed a great tendency to degenerate, and that sometimes to such an extent as almost to put a stop to our work, and make us helplessly dependent on the supplies of lymph from Europe and the Mofussil. Nothing of the sort occurred during the whole year under report. This better state of things is solely owing to animal vaccination.

Lymph.

14. Flushed with recent success, success that for the time appeared perfect in every respect, I wrote in my last annual report, in exultant tones about our animal vaccine operations, notwithstanding the warning note in the shape of failure of operations in some of the heifers supplied by the Municipal authorities. I was, however, doomed to sad, though as it afterwards proved, temporary, disappointment, which, while it lasted, made me extremely anxious about our ultimate success. Heifer after heifer proved a failure. Not that the operation did not take well in the calf—many a time the operation seemed to be a complete success so far as the calf was concerned, the vesicles appeared to be genuine, and gave lymph that to all appearance was every thing that could be desired, and yet when introduced into the human system it failed to excite the disease there whatever the care and attention with which it was inserted. On two different occasions Dr. Blanc procured for me supplies of animal lymph from Dr. Warlomont of Brussels, from which animal vaccination was re-established, but still there often was a strange peculiarity about the results. What appeared to be good lymph-yielding genuine vesicles, failed to produce any effect on the human subject; whilst indifferent looking vesicles gave us vesicles in the human subject of the perfect Jennerian type. A small heifer about three months old was inoculated on the 16th January 1871, with fresh fifth-day lymph. The skin became over-irritated after the operation and a kind of exanthematous inflammation attacked the whole shaved surface. By the fifth-day the inflammation had quite subsided, and the epidermis was found pealing off. Of the many punctures made, only 12 or 13 had taken here and there, but the vesicles were quite indifferent in appearance. Small-pox was at that time raging fearfully at Mazagon. We had no other lymph in any quantity at our command. In this emergency, knowing that animal vaccine virus, if it did no good never did any harm, I thought it expedient to try this lymph, indifferent though the vesicles appeared, and though I must say I had scarcely any hopes of its succeeding. Some 44 children were vaccinated, and when I visited the place on the 5th day, to my surprise out of 27 children that I then saw, the vaccina-

Animal Vaccination.

tion had taken very well indeed in 24. Here and there an insertion or two had failed, but for all that, the protection of the system was, in my opinion sufficient. It often happened, also, that the failure was not a complete one. Out of some 10 or 12 or more children vaccinated, perhaps in one or two a vesicle or two only would show themselves—but these of the true Jennerian type, containing lymph if possible more effective and energetic than any cow-pox lymph, the smallest possible quantity sufficing to produce a vesicle and not a single puncture proving a failure, thus showing that the original cow-lymph which produced the particular vesicle was not inert. There was a very curious instance of this, that came within my observation. On the 17th December last, I inoculated a small heifer, with fresh fifth-day lymph. On the fifth day after the operation, vesicles had risen, and though rather diminutive were apparently good. 9 children were vaccinated on this day. On the following day the remaining vesicles had somewhat dried up; but with two comparatively fresh ones two more children were vaccinated. All the first failed. The second day's two children, I saw on the 6th day after the operation. In one the operation had completely failed, in the other there was a miliary little red papule on the site of one of the punctures. Of course, I took this for a failure also. I vaccinated both these children again on that very day, and on the 3rd day after, when I went to observe the progress of the operations, to my perfect astonishment I saw the little papule blown into a fine well developed, genuine-looking vesicle. This was indeed the 8th day of the 1st operation, and the vesicle had the appearance of an ordinary developed 6th day vesicle. The secondary vaccination was also successful, three vesicles had formed from the new punctures. They followed suit with the first one. They had formed earlier, had remained diminutive all through their course, which was perfectly regular. Many heifers proved complete failures, and these were invariably from those that were supplied to us by the Municipality. Private heifers were all more or less successful with only one exception; as private heifers became scarce, our sources of good lymph began to be exhausted; and at length our failures became so very continuous, that in August we had to stop animal vaccination altogether for a time. During the month of September, having secured a few private heifers, and having bought some at Bandora I again commenced operations with lymph received from Dr. Blanc, and some I had myself preserved, and succeeded once more in establishing animal vaccination. The private heifers with a clean, clear, and thin skin, and always thoroughly healthy, were our salvation, as those supplied by the Municipality were our bane. Why this was so, I have not to this day been able to ascertain. Our operations went on pretty satisfactorily with more or less of success, till in the last week of November, owing to want of good heifers, our lymph again degenerated, and we had again failure after failure in heifers. This state of things continued till the middle of December, when a heifer inoculated on the 11th of that month, with some preserved lymph, proved successful, and gave us a fresh start once more. Since that time our animal lymph has been in an excellent and effective condition, twice replenished and renewed as it has been with lymph received from Dr. Warlomont of Brussels. Up to the end of the year our success has been wonder-

fully continuous this time. Out of 48 heifers inoculated, the operation failed only in 7, several of which were inoculated with preserved lymph, some received from Dr. Blanc, and some from our own stock. Of these failures, two took place in December, 4 in January, and only one in February. The one inoculated on the second of that month, whilst of the other 10 inoculated during the same month, and 13 in March, not a single one failed. During the year, I have inoculated 115 heifers. Of these 27 were supplied by the Municipality, 26 of them being paid for from the Cowasjee Jehangier grant; 19 belonged to private individuals, two or three only of whom required any remuneration to be paid to them for the use of their animals; 39 were bought by ourselves, either at Bandora or Coorla, and were afterwards sold by public auction; and 30 were supplied to us by a cattle merchant, who entered into a contract to supply us with a heifer every sixth day, for 8 months, at a certain fixed price. The expenses on account of animal vaccination, including all charges, amounted to Rs. 645-9-3; or Rs. 5-9-9 for each animal. Stunned and stupified as it were by the repeated and unaccountable failures, I scarcely thought about the desirability of keeping a record of our animal vaccine operations, which would be so extremely useful for future reference. From the month of November, however, I began to keep an account of the inoculations of the heifers, noting the date of operation, nature of the lymph used, general health and state of the skin to be operated upon, progress of the operation, and the result of the use of the lymph in the human subject. Simultaneously with this I began to keep a separate register of persons vaccinated with animal lymph, and to personally ascertain the progress and result of each vaccination, visiting the vaccinated persons as often as possible for this purpose. My object in taking all this trouble was to gather an amount of facts and gain personal experience which would enable me to speak with some degree of confidence on the subject of animal vaccination, as to how far it could be trusted in cases of emergency or at all. In doing this, however, I had not calculated the labour. The work was an up-hill one. Children were vaccinated by dozens in all parts of the Island. Many through their fears of lymph being taken, took care to try and keep out of my way. Notwithstanding these drawbacks, however, I patiently persevered till the increased extent of the field of operations, both as regards the number of vaccination and places, made it physically impossible for me to watch personally the progress of every operation performed. I, however, never allowed a single opportunity of witnessing the progress and result of an operation to pass unavailed of. In this way, I must have during the last 15 months personally observed and noted the results of several hundreds of operations which I performed on the children of my friends, relatives, acquaintances, patients and neighbours, who naturally came under my close and attentive observation. But besides these, many European children, whose houses could be easily found, on account of correct addresses, were also seen; and also many Parsee children. During the last month, not a few from amongst the general public brought their children to me for inspection, though the number of those not personally seen by me was still considerable. The result of all this was that, in cases

where there was an intelligent, careful and attentive watching of the inserted lymph first, and of the resulting vesicles afterwards, there was scarcely a single instance of failure, or doubtful case. Of course there were instances in which one or two of the punctures did not take; but the vesicles that did make their appearance appeared to me from the severity of their local and constitutional effects, to be quite sufficient to give the necessary protection from small-pox. In my last report I stated that animal vaccination was kindly received by the community of Bombay. There were a few dissentient voices at the commencement, but they were, before long, all silenced. This year, however, there has again been a cry against it, strange again from the Europeans. Their disinclination is, however, simply on the score of the violence of the effect. Two cases were mentioned to me where the severity of the local and constitutional irritation had proved all but fatal. In one indeed it was thought a fortunate circumstance that only one out of four punctures made had taken, or else in all probability the result would have been fatal.* During an experience of some 15 months, based as it is on the personal observation of several hundreds operated upon, and which included not a few children of those nearest and dearest to me, I came across only three cases, where there really were serious consequences as the result of the operation. In one Erysipelatous inflammation attacked the arm, and thence extended all over the trunk and lower extremities. In the 2nd the arm was very much inflamed and swollen, together with the glands in the axilla, and there was a considerable amount of febrile disturbance for some days. In the 3rd the child had badly scratched the vesicles and a deep, inflamed sore was the result, and there was considerable tumifaction of the arm also. All the three, however, got ultimately well without much difficulty. In making these statements, I do not by any means deny the possibility of serious, nay fatal, consequences attending the use of animal lymph, in unhealthy and weakly constitutioned children, but it would be more as the result of the peculiar state of the system than the use of cow-lymph; and human-lymph, possessing the necessary amount of effectiveness and activity would, under similar circumstances, in my opinion, lead to similar results. Bad results from the use of animal lymph, therefore, would rather prove the carelessness of the operator, who was remiss in his duty of selecting his subject, and the blame would attach to him more than to the lymph he had misused. The inference, however, is undeniable—that with animal vaccination great judgment and discretion shall have to be exercised in the selection of subjects for the operation, and it would be a dangerous thing in the hands of unprofessional and ignorant men, such, indeed, as constitute the bulk of our vaccinators. I have found little infants taking animal vaccination very quietly, and kindly; indeed I do not recollect of a single instance in which the effects both constitutional and local were more severe than what would be expected from the use of ordinary human lymph of the required activity. This would lead to the conclusion

* I do not think that the constitutional effect would have been much more severe even if all the insertions had "taken."—J. P.

that animal lymph should be used at the earliest practicable age, say from 2 to 4, or 6 months at the latest, to save all unpleasant consequences. And it is a fortunate circumstance that this is so, for any scheme of compulsory vaccination must make it imperative on parents to get their children vaccinated before they are 6 months old.

15. Before concluding my report, I would beg to express my sense of the many obligations I am under to Dr. Hewlett for his ready help, and to Dr. Blanc for his having kindly given me supplies of animal lymph which he took the trouble to obtain from Belgium.

16. The principal event of importance in connection with the Presidency Vaccination Department is the bodily transfer of the whole of my establishment to the Municipality, and the addition to it of 5 vaccinators and 8 peons, bringing the whole number up to 11 vaccinators and 11 peons. The local Superintendent alone draws his pay from the Imperial treasury.

KUTCH.

One Native Assistant Superintendent, and three Native State Vaccinators under Mr. Dorabjee Hurmusjee, G.G.M.C.

Population 400,000. Total cost Rs. 580. Average cost of each successful vaccination, 1 rupee and 2 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70.....	610	.....	.....	550	90·1
1870-71.....	648	38	.....	571	92·1

During the year under report, commencing from 1st April 1870 and ending on 31st March 1871, there were 648 vaccinations performed by the vaccinators and at the Bhooj and Mandvee dispensaries. For the first two months of the year there were only two vaccinators, of which one was stationed at Moondra and the other was moving about different towns and villages. During the third month their number was increased by two more, one of them was however found unfit for duty, and was dismissed in the course of a month. The station vaccinator left his service at the end of the year 1870, for higher emoluments, so there remained only two vaccinators at the beginning of 1871, one of whom unfortunately fell sick and was on leave for about a month. Two more vaccinators were then entertained, but one of them submitted a

false monthly return, for which he was fined and dismissed, the other was discharged, as he was found quite incapable of working amongst the people of the villages. Since then I have engaged two more, and hope to see the four vaccinators working well from the beginning of the next official year. With these changes amongst them it was naturally to be expected that the progress of the work should be very slow, but on comparing the total number of persons vaccinated this year with that of the previous one, it gives a balance of 38 operations in favour of the present year. Of the 648 persons vaccinated there were 571 successful, 49 unsuccessful and doubtful, and 28 were those who escaped observation after the operation.

Sex. 2. There were 363 males and 285 females.

Caste. 3. There were 393 Hindoos, and the rest, 255, were Mussulmans.

Cost. 4. The cost of each successful case was Rs. 1-0-2.

Lymph. 5. The lymph used throughout the year was very good. I sent for a supply from Bombay from Mr. Anunta Chandroba, and it has acted exceedingly well. I have not been obliged to send for a fresh supply since, as it still answers the purpose very well.

Small-pox. 6. A few cases of small-pox were reported as having occurred here and there during the latter part of the year. Cases of measles, however, are found almost in every house.

EXTRACTS

FROM THE

REPORTS OF CIVIL SURGEONS AND OTHERS.

POONA.

One Government Vaccinator under the Civil Surgeon, Surgeon Major R. G. LORD, M.D.

Population (portion of Poona) 30,000. Total cost Rs. 240. Average cost of each successful vaccination 4 annas and 2 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	1,565	.....	.....	1,323	85·0
1870-71	1,055	.....	510	900	85·3

The annual return of vaccination to close of official year (31st March) is forwarded in compliance with directions from the Superintendent General of Vaccination, though the vaccinator was transferred for duty under the Superintendent of Vaccination, Central Circle, from the 1st March 1871, and his monthly returns of work have been forwarded to that office since the 1st July 1870.

A reference to last annual report will supply information as to amount and source of salary, extent of charge &c.

There has been a falling off in the number of operations both this year and last, and a proportionate increase in the average cost of each case, which this year gives 4 annas and 2 pies as the expenditure for every successful case.

The difficulty in procuring children for vaccination, without the assistance of a peon, is stated to be the cause of paucity of operations.

The lymph has been of good quality, and a supply always available when asked for.

There has been no prevalence of small-pox in the civil portion of the station throughout the year, and only one case, received from the cantonment bazaar, was admitted into the Sassoon hospital during that period.

NASSICK.

One Municipal Vaccinator, under Honorary Assistant Surgeon B. BURN, in Medical charge.

Population 23,000. Total cost Rs. 252. Average cost of each successful vaccination 13 annas and 4 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	476	.....	.....	424	89·1
1870-71	486	10	.....	301	82·0

Vaccination has been confined during the past year to the town of Nassick alone, and has been performed by the Municipal vaccinator only; consequently the number of vaccinations in the present return is much less than in former returns, containing the total work of the Government vaccinator and that of the Municipality. The total number vaccinated during the past year is 480, of which 62 were unsuccessful, 117 not seen after the operation, and 301 ascertained to have succeeded. Taking the numbers given of successful and unsuccessful cases, and allowing those not subsequently seen to bear the same proportion, the failures will be 17·1 per cent., a very high ratio. The operations of the year just closed are less favourable than those of the preceding year, the cause of which, from my knowledge of the former and present vaccinator, and an inspection of the monthly results of work, I should be inclined to attribute to the more strict and correct formation of the returns for the past than for the preceding year, than to any actual difference in the results as relates to the percentage of unsuccessful cases.

2. The decrease in the numbers vaccinated has been on two occasions officially brought to the notice of the President of the Municipal Commission by the Superintendent of Vaccination of the Central Circle, and inquiries have been made respecting it. It seems to be owing to the caprice of the people themselves, upon whom vaccination is in no way compulsory, and the vaccinator having no assistance from the Native authorities in obtaining the children whom he knows have not been vaccinated,

owing to the refusal of the parents to have the operation performed, and frequently being left without fresh lymph, by the children being sent away to a village on the very morning of the day he wanted them, to obtain lymph for others, the difficulties in the way of his operations have been very great; so much so, that he has sent in the resignation of his office, which I would recommend the acceptance of, as, although I believe him to be a good and honest man, with a sufficient knowledge of his duties, he may possibly want the energy and perseverance necessary to ensure success, and would suggest that another be appointed in his place.

3. The lymph has appeared to be good during the past year, and the vesicles have shown a healthy appearance.

4. The registration of births has been commenced within Nassick during the present year, and this will tend to give an idea of the actual disproportion of the number of children vaccinated to those born. From the 1st January to the 31st March, 138 births have been registered, and during the same period 125 children were vaccinated. Of course these 125 vaccinations may have consisted of but a small proportion of the children born during this period, but in time, allowing for early deaths in infancy, an approximate result may I think be arrived at.

5. Small-pox commenced to prevail in the town towards the latter end of February last, and has continued up to the present time, but not in a virulent form, nor does it spread very quickly, 28 cases in all having occurred since its commencement, with 5 deaths, in children, who had not been vaccinated.

DHURRUMGAUM.

Operations performed by Mr. Apothecary W. WAITE, Khandeish Bheel Corps.
Population..... No Cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70.....	167	.....	.....	165	98·8
1870-71.....	215	48	.....	200	94·0

Vaccination and re-vaccination have progressed very favourably in the Khandeish Bheel Corps during the past year, and with, I am happy to say, very good success, as will be seen from the very small number of failures. 117 children of all ages, varying from 3 months to 5 years, were vaccinated. Of these 100 were of the Bheel Corps, and

17 of followers. 111 cases proved successful, and only 2 unsuccessful and 4 doubtful. These latter were again vaccinated, and the result was favourable. The number of unsuccessful (including the doubtful) cases to successful, it will be observed, is very small, 5·4 per cent., being 3·8 over that of the preceding year, which showed 1·6 per cent. A greater number of children by 50 were vaccinated during the previous year; but this is easily accounted for by a larger number of children being absent from head quarters who invariably accompany their parents when proceeding on outpost duty in the districts, and thereby lose the chance for some time to come of being vaccinated. It must not be presumed that because fewer children have been operated upon this year, that vaccination in the Bheel Corps is on the decline; on the contrary, it has been most strenuously persevered in, and carried on with great care and regularity during the year; and if the re-vaccinations are taken with the vaccinations, it will be seen that a greater number by 48 have been operated upon this year than is recorded during the period embraced in the former report.

It was, I may remark, with some difficulty and a good deal of persuasion that the men of the Bheel Corps could be brought to submit to the operation of re-vaccination, which was commenced on the 29th of August last, from which date up to the end of March 1871, 98 cases were operated upon. Of these 89 proved successful, and only 9 unsuccessful; the number of unsuccessful cases to successful is exceedingly small, being 9·2 per cent. The very great success attained in re-vaccination throughout the period embraced, cannot be easily accounted for, and is I admit unusual, and consequently may seem doubtful, yet the statement rendered is nevertheless true, and accurate, for every person brought forward for re-vaccination was closely and carefully examined by myself, and I can safely state that none but those from the age of 10 years and upwards, and bearing distinct and indisputable marks of previous vaccination, were ever subjected to the operation.

Four persons, who in infancy were attacked mildly with small-pox, were re-vaccinated, and are included in the number of successful cases. Vaccination and re-vaccination in the Bheel Corps at Dhurrumgaum is always performed by myself and assistant from good and healthy lymph, a supply of which is kept in the hospital.

It is gratifying to have to report again, during another year, the total absence of small-pox from amongst the children of the corps, and that only a few mild cases are stated to have occurred in the town of Dhurrumgaum. No casualties were reported.

SHOLAPOOR.

One Government Vaccinator, under the Civil Surgeon, Surgeon G. Y. HUNTER (on leave); Assistant Surgeon LEGGETT (Officiating).

Population 28,646. Total cost, Rs. 220. Average cost of each successful vaccination 3 annas and 8 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success, excluding those unknown.
		Increase.	Decrease.		
1869-70	949	.....	.....	802	89·6
1870-71	1,018	69	.....	948	93·1

The total number of cases vaccinated during the year by the Government vaccinator in the town and suburbs of Sholapoor, as shown in the above table, exhibits an increase of 69 as compared with the preceding year. During the period under review, there have been two vaccinators at work in the town of Sholapoor and their joint labours raise the total of vaccination to 2,075. The second vaccinator is employed by the Municipality and furnishes his report thereto. Vaccination is practised continually in the City, and once a week the children are brought to the Civil Hospital by the Government vaccinator for my inspection. In nearly all the cases which came under my observation the vesicles were well formed and the lymph of good quality. The vesicles, though normal in character, were somewhat smaller during the rainy than in the other seasons. The vaccinator is willing, diligent, and well-behaved.

I am happy to be able to state that no epidemic occurred during the last year.

The Government vaccinator was transferred to Barsee district on 1st March last, and now there is only one vaccinator who is employed by the Municipal Committee.

SHOLAPOOR CHARITABLE DISPENSARY.

Operations performed by NURSOO GORAPA, 3rd Class Hospital Assistant, in charge of Dispensary.

Population 28,646. No Cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Sucessfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	201	.....	.....	164	86·3
1870-71	312	111	.....	281	92·4

The number of persons vaccinated during the year was 312, being an increase of 111 above that of the year 1869-70. Of these 152 were males, and 160 females. There were 8 Christians, 243 Hindoos, 60 Mussulmans and 1 Parsee. 127 of these being under and 185 above one year old. The operation in 281 proved successful, 23 unsuccessful and doubtful, and 8 unknown. It was performed every week on Wednesdays. The lymph used was generally good, and the vesicles were normal in size and appearance. No measles or any other epidemic prevailed during the year under report. The average number vaccinated every week was six.

BELGAUM.

One Government Vaccinator under the Civil Surgeon, Surgeon Major G. G. MAITLAND, F.R.C.S.; Surgeon Major SYLVESTER, M.D. (Officiating).

Population 35,973. Total cost Rs. 210. Average cost of each successful vaccination 6 annas and 1 pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	627	.....	.....	611	97·4
1870-71	639	12	.....	626	97·9

A review of the work performed by the Station vaccinator during the past official year exhibits a very slight increase in the number vaccinated as compared with the previous year's operations, the actual number being 627 in 1869-70 and 639 in 1870-71, the percentage of success being nearly the same in each year, that for the last year being 97·9, and for the previous year 97·4. It was hoped that from the fact of a peon being permanently attached to the vaccinator to assist in procuring the subjects for operation and in verifying the results of the same, a considerable increase in the number of vaccinations would be observed, and I am unable to explain why this has not been the case.

The supply of lymph has been abundant and of good quality throughout the year, and the success which has resulted may, I believe, be attributed to the almost universal practice of arm-to-arm vaccination, by which the propagation of cow-pox by means of glasses, tubes, &c., has been rendered unnecessary.

The result of the vaccinator's work has been carefully inspected at stated intervals, and with few exceptions the vesicles have been found of normal appearance, rarely presenting any exceptions to the perfect characters of the pock, and running a regular course.

I believe the climate of Belgaum, from the absence of extreme temperatures, to be particularly favourable to the success of vaccination, and although it has been supposed that atmospheric moisture is inimical to vaccination, I have observed no falling off in the percentage of successful operations during the heavy and protracted rains which fall in Belgaum during the monsoon season.

A few cases of modified small-pox occurred in the Cantonment during April and May of the past year, and one case of that disease from the Lascars' lines was admitted for treatment into the Civil and Staff Hospital (was accommodated in a tent).

In addition to the operations performed in the villages within a radius of 5 miles from Belgaum, 153 persons have been vaccinated within the limits of the Cantonment, of which 146 were successful.

The vaccinator is an experienced man, and though somewhat advanced in age, is active and zealous in the performance of his duty, and I have reason to be satisfied with the manner in which he has performed the work entrusted to him.

DHARWAR.

One Government Vaccinator under the Civil Surgeon, Surgeon M. M. MACKENZIE.

Population 30,000. Total cost Rs. 240. Average cost of each successful vaccination 6 annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	835	.....	.....	718	85·9
1870-71	848	13	.....	763	90 4

The vaccination report for the past official year shows an increase of 13 total vaccinated over that of the preceding year. 763 were successful, giving a percentage of 90·4 as compared to 86·0 of the preceding year. The greatest number of monthly vaccinations occurred respectively in May, June, January, July, November, and February, giving 82, 82, 77, 72, 72, and 72.

The supply and quality of lymph has always been fully kept up, and a tube filled with a little lymph has been sent every week to the Superintendent of Vaccination, Southern Circle.

According to the monthly report forwarded by the Collector's department I am glad to be able to state that there has been a great falling off in the number of small-pox cases in the Dharwar Collectorate. While 1869-70 gave a total of 658 cases, the nine months ending 31st December 1870 gave only 378, a considerable reduction; for the remaining 3 months of the official year 1870-71 the monthly reports have not been received. The greater number of small-pox cases occurred in the months of July, August, and June, respectively 61, 55, and 53.

KARWAR.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon S. B. HALLIDAY (Acting).

Population 9,975. Total cost Rs. 240. Average cost of each successful vaccination 7 annas and 2 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	733	.....	.....	604	86·0
1870-71	783	50	.....	535	68·3

The total number vaccinated during the year 1870-71, amounts to 783, being 50 more than the year preceding. Of these 441 are males and 342 females. 535 were successful, and 248 unsuccessful, including those doubtful. The percentage of success is 68·3. Considering the population is only 9,975 the total number vaccinated could not be expected to be more, and the vaccinator sometimes is obliged to go beyond the municipal limits of the town in search of children with a view of keeping up the supply of lymph. The inhabitants of Karwar have still great objections to get their children vaccinated under one year of age, and again great prejudice prevails amongst the community against allowing the lymph to be taken from the arm of the successfully vaccinated children, they think that the protective virtue of vaccination would be lost if the lymph be removed from the arm. This I consider interferes greatly with the practice of vaccinating children direct from arm-to-arm, and in several instances the children were vaccinated with preserved lymph.

52 persons were re-vaccinated, out of which 21 proved successful and 31 unsuccessful. Endeavours have been made to induce persons to be re-vaccinated, by explain-

ing to them the benefit arising from it, but as the practice has only been recently introduced, the people have little faith in its protective power.

Small-pox was prevalent to a very limited extent in the neighbourhood of the town. 17 deaths have been reported. All these cases with the exception of a few were protected by vaccination. The disease did not last long, and no sanitary measures were necessary to arrest its progress.

The lymph employed was good throughout the year, and the vesicles were well developed and normal.

KULLADGHEE.

One Municipal Vaccinator under the Civil Surgeon, Assistant Surgeon SELIM MYER SALAMAN, M.A., M.D.

Population 15,000. Total cost Rs. 146. Average cost of each successful vaccination 7 annas and 3 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	651	.....	.....	651	100·
1870-71	370	.....	281	321	91·

During the year 1870-71, 370 persons have been vaccinated by the Municipal vaccinator in a population of 15,000 at Kulladghee and surrounding villages, at a total cost of Rupees 146, including pay of vaccinator and contingencies, at the average cost of 7 annas and three pies for each vaccination, this sum being paid by the Municipality of Kulladghee.

2. The very large falling off in the number of persons vaccinated is probably due to the fact that most of the children had been previously vaccinated.

3. The lymph used is of good quality, the vaccinations are as far as practicable performed from arm-to-arm.

4. There have been no cases of small-pox either in Kulladghee or the surrounding villages.

KOLHAPOOR.

One Native State's Vaccinator under Mr. Apothecary G. SINCLAIR, in Medical charge Civil duties.

Population 110,000. Total cost Rs. 399. Average cost of each successful vaccination 2 annas and 1 pie.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70.....	3,165	.....	.....	3,107	89·8
1870-71.....	3,476*	310	.....	2,959*	96·† 54·‡

* Includes re-vaccinations. † Primary. ‡ Re-vaccinations.

The whole of the vaccine operations during the past year in the town of Kolhapoor and villages in the neighbouring Petah of Kurwar, were performed by the Station vaccinator.

2. The population of the town of Kolhapoor is estimated at 50,000, that of the villages in the Kurwar Petah at 60,000, making a total of 110,000 inhabitants amongst whom these operations were performed.

3. The total cost of vaccination including pay of vaccinator, peons, and contingencies amounted to rupees 399, which amount is wholly defrayed by the Kolhapoor State; the average cost of each vaccination has been 2 annas and 1 pie.

4. There is, it will be observed, a decrease in the number primarily vaccinated during the past official year as compared with the year 1869-70; the percentage of success is higher than during the preceding year. A new supply of lymph in glass tubes has been obtained from the Superintendent Southern Circle. The decrease is to be ascribed to the circumstance that small-pox did not prevail during the past year to the same extent that it did the year previous.

5. The total number of primary vaccinations by the vaccinator was 2,056. Of these 1,094 were males, and 962 females; arranged according to caste 2,020 were Hindoos of all castes, and 36 were Mussulmans. In regard to age, the proportion of children under 1 year was about 19·6 per cent. of the whole number vaccinated.

6. Amongst the low castes of Hindoos such as chumbars, mangs, and mahars, there were 157 vaccinations, or in the proportion of 10 per cent. of that class.

7. Only 26 re-vaccinations have been performed, and these were mostly amongst educated natives of Kolhapoor, the Head Master of the High School having shown

an excellent example by being re-vaccinated himself, along with the adult members of his household. I am hopeful that the small beginning now made will go on steadily increasing, and that much of the apathy and opposition now manifested will be overcome by explaining to the educated classes the importance of re-vaccination in affording additional security against small-pox if successful; whilst failure only affords an assurance that the original vaccination has been so complete that its prophylactic influence still renders the person insusceptible to small-pox.

8. The quality of the lymph has been uniformly good throughout the year. Latterly however the vesicle has not presented the usual healthy, large, and well-shaped appearance, nor has the character of the resulting cicatrix been as well marked as could be desired. As already stated, a fresh supply of lymph has been obtained from Mr. Raby, the Superintendent of the Circle.

9. The conduct of the vaccinator has been satisfactory. He is a very expert operator, and I have every reason to be satisfied with his work, as well as the trustworthiness of his returns.

10. I have no improvement to suggest.

11. The annual vaccination return of the Kolhapoor dispensary is herewith forwarded. It shows an increase in the number of operations during the past year, being 431 against 367, or an increase of 64; of these, 99 per cent. were successful. The proportion of children under 1 year has been 39·9 per cent.

12. Vaccination has also been regularly practised amongst the families of the Kolhapoor Infantry whenever subjects could be obtained. 122 children were vaccinated; of these only 89, or in the proportion of 73 per cent. only proved successful, owing to the degeneration of the lymph.

13. Re-vaccination has been extensively practised in the corps. Every adult male and female has been operated upon, with the following results. Of 460 subjects bearing cicatrices of previous vaccinations, 287, or a proportion of 62·4 per cent. proved successful, and out of 211 persons who were protected by small-pox either inoculated or natural, 59, or a proportion of 28 per cent., were successfully re-vaccinated. Of course the results were more or less modified in many of these cases, whilst in others the vesicles were as perfect and characteristic as those observed in primary vaccination.

14. 167 prisoners in the Kolhapoor jail were also re-vaccinated during the year, and 70 of the number or a proportion of 42 per cent. were successful. The result in 15 of the number is not known, in consequence of their release soon after they were operated upon.

15. Small-pox appeared in Kolhapoor and in one of the villages of the Kurwur Petah during the past month (March), but as already stated the disease was less prevalent than it had been during the preceding year.

TANNA.

One Municipal Vaccinator under the Civil Surgeon, Assistant Surgeon W. C. KIERNANDER (Acting).

Population 10,581. Total cost Rs. 252. Average cost of each successful vaccination 6 annas and 8 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	324	.....	.....	300	92·5
1870-71	632	308	.....	597	94·4

Vaccination has been carried on during the year with very satisfactory results, there being only 35 unsuccessful cases out of 632 vaccinations; of these 329 were done in the surrounding districts and 303 in the town. It appears to me that more should be done, and that the vaccinator's attention should be less directed towards the surrounding districts as he is a servant of the Municipality. His pay is the same as it was three years ago, 20 Rupees per mensem.

There has been no small-pox during the year. The lymph has been good and the supply regularly kept up. The vaccinator is a willing, hard-working individual, and has a great deal of opposition to put up with in order to get the people to allow their children to be vaccinated, and even if they do allow it, they frequently break the pustules before the lymph can be obtained from them.

BANDORA.

Operations performed by Sub-Assistant Surgeon A. DESOUSA, in charge Dispensary.

Population 7,746. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	192	.....	.....	70	76·
1870-71	247	145	.....	201	80·

During the year ending 31st March 1871 the total number of vaccinations and re-vaccinations performed amounts to 247, being an excess of 145 over the previous year. Most of the vaccinations were performed in January, February, and March, agreeably to Circular No. 166, dated 14th May 1870, from the Superintendent of Vaccination, Western Circle.

The number of operations performed at each sitting varied from 12 to 44, according to the number of applicants. To secure a regular supply of lymph for subsequent operations some of the children belonging to St. Joseph's Convent at Bandora were at first vaccinated, and it was subsequently kept up, both at the dispensary and the Convent on every succeeding Friday, the lymph being for the most part obtained from the latter institution. The percentage of success obtained during the year under report is a very fair one, namely 79·8. The appearance of the vesicle on the 7th day, and its progress from the commencement have been satisfactory. Small-pox was not seen here except during the month of March last, when a few cases appeared in a sporadic form in the town. No cases however presented themselves for treatment; the inhabitants generally speaking have a great prejudice against allowing this disease to be medically interfered with.

CALLIAN.

Operations performed by Sub-Assistant N. Dunjeebhai, in Medical charge Dispensary.

Population 8,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success, excluding unknown.
		Increase.	Decrease.		
1869-70	43	.....	.....	32	80·
1870-71	113	70	.....	103	96·2

The number of persons vaccinated during the year under report was 113, out of which four cases were re-vaccinations, while during the previous year the number was 43. The people are now beginning to understand the benefits of vaccination. By vaccinating in the months of December and January last, as directed by the Superintendent of Vaccination Western Circle, in Circular No. 166 of the 14th May 1870, the results were more satisfactory than usual, as there was a higher percentage of successful cases, being 96· this year instead of 80· last year, and the field for selecting

good vesicles from was greater, as fifteen or twenty children were vaccinated at one sitting instead of two or three children at one sitting in weekly vaccinations. There were four cases of re-vaccinations in children vaccinated successfully before, among which one case was successful. There was no epidemic of small-pox in the town, or admission into the Dispensary from that cause.

BHEWNDY.

Operations performed by Sub-Assistant Surgeon SHAMRAO JAGHANATH, L.M., in charge Dispensary.

Population 10,000. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	39	.....	.....	24	82·7
1870-71	77	38	.....	52	69·3

The total number of vaccinations performed during 1870-71, compared with the total number of the previous year, shows an increase of 38. Fifty-two proved successful, two unknown, and the rest, 23, unsuccessful; thus giving 69·3 percentage of success: a ratio of success inferior to the one obtained in the previous year.

2. Fresh lymph to start vaccination was obtained from the Superintendent of Vaccination Western Circle; that Officer kindly forwarded vaccine lymph both in a capillary tube and on seven ivory points. The lymph on the ivory points succeeded well, and produced large and full vesicles; the liquid lymph in the tube failed completely.

3. The return shows only one operation in excess of children vaccinated.

4. No re-vaccinations were performed during the year.

5. The people of Bhewndy, both Hindoos and Mahomedans, though not averse to vaccination yet entertain great and strong prejudices against allowing us to take lymph from the arms of their children, and this objection on their part I have not as yet been able to overcome, but I trust that I will be able to impress upon the community the harmlessness and necessity of this practice.

6. In conclusion I beg to bring to notice that I have done my best to impress the benefits of vaccination upon the people of this place, and I am happy to say that I have succeeded in vaccinating most of the children of a caste of the Hindoo population of Bhewndy greatly prejudiced against vaccination.

ALIBAGH.

Operations performed by Sub-Assistant Surgeon PEREIRA, in charge Dispensary. Population 4,704. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	161	.....	.....	136	84·4
1870-71	275	114	.....	266	97·

During the year under report (embracing a period of nine months only) 273 persons received vaccination and two were re-vaccinated. This number compared with that of the preceding year (1869-70) shows an increase of 114 operations. Of the 273 vaccinations 264 were successful, and 9 unsuccessful, showing a percentage of 96· successful cases.

Two re-vaccinations were performed successfully during the year.

Fresh lymph was invariably used, and its purity and goodness were proved by the success attending vaccine operations.

The year under report was peculiarly exempt from the prevalence of the small-pox disease.

The benefit and immunity conferred upon the people by the practice of vaccination is admitted and believed in by the people of the town as well as of the adjacent villages; objection is at times raised on account of days being those of their religious observance, or on account of certain unfavourable seasons. The lower classes object purely on account of the expense they have to undergo, for 21 days, in performing the worship of the goddess which presides over small-pox when a person is vaccinated in their house. The Kolee section, proverbially wanting in intelligence, and devoted to superstition, rarely receive vaccination. Once I represented this matter to the District Magistrate with regard to a neighbouring village, called Wursolee, and by his persuasion the children of that village were vaccinated.

Vaccination was performed, during the 9 months, on every 7th or 8th day. In accordance with the instructions received from the Superintendent of the Circle, vaccination was stopped from the close of December last. Two seasons in the year have lately been fixed for performing vaccination. These seasons, I beg to observe, are not those at which people here are anxious to receive vaccination. The hot season of the year is the one in which they readily accept vaccination, probably through fear of the small-pox breaking out. This limiting of vaccination to two seasons in the

year will perhaps affect the total number of annual vaccinations. Every endeavour will however be made to give due notice to the people of the town and the neighbouring villages, through the Civil authority, of the time when vaccination is to be opened, and I hope there will be a good gathering of recipients at each of these two seasons.

RUTNAGHERRY.

One Government Vaccinator under the Civil Surgeon, Surgeon C. JOYNT, M.D.

Population 20,789. Total cost Rs. 231.

Average cost of each successful vaccination 8 annas and 3 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	1,188	.....	.....	847	72·2
1870-71	619	.....	569	443	71·5

During the year under report the number of vaccinations performed in Rutnagherry and its immediate neighbourhood was considerably below that of the year preceding, and also lower than the average of late years. It is not easy to offer a satisfactory explanation of this decrease. Undoubtedly there still exists in this neighbourhood a great reluctance on the part of parents, and especially female parents, to have their children vaccinated. The Station vaccinator who was employed under the Civil Surgeon until the 28th of February, was deficient in tact as well as energy, and failed to secure the confidence of the community. He was discharged on the vaccinators being made subordinate to the Circle Superintendent, on the 1st March. The vaccinator sent by the Superintendent appears to possess more energy, and I hope that the ensuing year will show better results than the past.

Besides the vaccinations shown in the return, 2 European children were successfully vaccinated.

Throughout the year the lymph was of variable quality, sometimes good, at other times indifferent. During the visit of the Superintendent several children were vaccinated direct from the cow, but a failure resulted in each case.

Small-pox prevailed in several talookas about Rutnagherry during the year, but was much less prevalent in the Town and immediate neighbourhood than in the year 1869-70.

DAPOOLEE.

Operations performed by or under the direction of Honorary Assistant Surgeon A. POLLARD, in charge of Civil Hospital.

Population 9,000. No Cost.

Years.	Total. Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	348	.....	.....	288	82·8
1870-71	413	65	.....	341	82·

During the year 1870-71 there were 413 operations performed at the Station of Dapoolie; of which number 9 were re-vaccinations of persons previously vaccinated with success, and two children were primarily operated upon twice each; there has consequently been only 411 persons actually vaccinated, including the re-vaccinations. When compared with the preceding year this shows an increase of 63 persons vaccinated, and a still greater increase of 159 over that of the year 1868, which may be looked upon as a sign that the people are becoming more alive to the benefits derived from vaccination.

During the first half of the year, vaccination was carried on almost uninterruptedly in Dapoolie and the surrounding villages some miles distant, but during the latter part, my operations have been confined to the Camp of Dapoolie and a few villages in the immediate neighbourhood, as my Dispensary servant, who has been taught to vaccinate, could not be spared to vaccinate at a distance; the District vaccinator doing the work I am unable to perform. During the months of December and January and the greater part of February no vaccination was performed.

In the month of February 1871 small-pox appeared in the village of Julgaum, which is about a mile from the Camp, and about 20 children are reported to have been attacked, of which 3 died. Upon inquiry I find that those children had been vaccinated. Vaccination was at once commenced in this village and is now being carried on, re-vaccination being performed also, on those who will undergo the operation.

VINGORLA.

Operations performed by or under the direction of Mr. Apothecary MUNDAY, in charge Dispensary.

Population 10,618. No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	296	.....	.....	275	95·8
1870-71	463	167	.....	453	97·8

The total number vaccinated during 1870-71 was 463, viz. 253 males and 210 females, of which 243 were under one year, and 220 above one year old. 453 proved successful and 10 unsuccessful, giving a percentage of successful cases of 97·8. Vaccination has been performed in my presence by the Native Medical Pupil attached to the Civil Hospital. The population of the Town is upwards of 10,000, not including 300 Civil Establishment and 166 Native Police. The only cost is for two lancets, found by Government. There is an increase of 167 in the number vaccinated, compared with the preceding year.

2. The lymph has been good throughout the year.

3. Improvement might be made if the children could be collected at an appointed place in the town.

4. No small-pox occurred during the year.

5. In consequence of instructions received, vaccination was persevered in during the months of December 1870, January and part of February 1871; all the children that could be found unprotected were vaccinated at their dwellings, except the Banians, who positively decline to submit to it.

All appear to be of opinion that re-vaccination is not necessary.

SURAT.

One Government Vaccinator under the Civil Surgeon, Surgeon H. J. GANE.

Population 90,000. Total cost Rs. 328. Average cost of each successful vaccination, 3 annas and 9 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	1,680	.....	.....	1,523	96·7
1870-71	1,602	.....	78	1,371	94·9

1,602 persons were vaccinated during the past year, being a decrease of 78 as compared with the previous year. No re-vaccination has taken place.

There is great difficulty in collecting children for vaccination, particularly amongst the Parsees.

Animal vaccination was carried out by Dr. Colah during the month of October, afterwards by Sub-Assistant Surgeon Dossabhoy; but it was obliged to be abandoned for the want of funds.

There is one great drawback to the carrying out of animal vaccination which I fear will not easily be overcome. I allude to the difficulty in procuring children for vaccination in the early morning. Mothers cannot be persuaded to bring their children at an early hour. I hope, however, when Dr. Colah returns to Surat that he will continue his experiments on animal vaccination, and with greater success. I learnt from Sub-Assistant Surgeon Dossabhoy that a few cases of small-pox had occurred in the City during the past month, but no cases have come under my observation.

Vaccination has been carried on during the past year by the vaccinator under my immediate supervision, and I have much pleasure in bearing testimony to the satisfactory way in which he has conducted his duties.

AHMEDABAD.

Two Municipal Vaccinators under the Civil Surgeon, Surgeon Major D. Wyllie, M.D.

Population 150,000. Total cost Rs. 552. Average cost of each successful vaccination, 1 anna and 9 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	4,047	.....	.....	3,881	96·8
1870-71	5,429	1,382	.....	5,007	96·7* 89·4†

* Primary Vaccinations. † Re-vaccinations.

The total number of vaccine operations was 5,429, being an increase of 1,382 as compared with the previous year. This result is entirely due to the introduction of re-vaccination, which commenced from the date of last return.

The primary vaccinations numbered 3,527 and re-vaccinations 1,902. Classed by sex the primary vaccinations were 1,829 males and 1,698 females, 2,211 being under one year and 1,366 over that age. The ratio of successful cases was 96·7 per cent, as against 96·9 in the previous year.

Of the re-vaccinations aggregating 1,902, the ages ranged from 4 to 35 years, the majority however being under puberty. Full half (1,125) were males. As respects results, 89·4 per cent. were returned as successful, and while most presented perfect vesicles, others for obvious reasons were modified, and some doubtless spurious.

Fresh lymph was introduced at the beginning of the year, and it has continued active and good throughout, the resulting vesicles, especially in primary cases, being well formed and distinctive, and with very rare exceptions corresponding to the number of lymph insertions made, ordinarily three in each arm. The cicatrices also have presented characteristic foveation.

Both vaccinators have conducted their duties satisfactorily. They are steady, industrious, painstaking men, and I am glad to mention that within the past few weeks they have had an incentive to additional exertion in an increase of pay, from rupees 12 to 20 each, granted by the liberality of the Municipality. One performed 2,728 vaccinations, and the other 2,701. The largest number of operations was in May when they aggregated 555, the least in November when they fell to 402.

There was no small-pox throughout the year to give a stimulus to vaccination, nor on the other hand was there any infantile epidemic to delay progress up to the commencement of last month, when cases of measles and hooping-cough began to appear, and the former ailment is now widely prevalent.

Animal vaccination was begun here by Dr. Colah in November last, and thereafter carried on by Mr. Sub-Assistant Surgeon Ruttonjee Hormusjee, whose account of his proceedings I beg herewith to forward. Although the utmost care and attention were taken to ensure success, the experiments nevertheless resulted unfavourably. In this, however, there are no grounds for regret, as animal vaccination, with its many uncertainties and drawbacks, could never be advantageously employed in the case of a community already enjoying the benefits of an efficient system of arm-to-arm vaccination, nor ever be necessary where an abundance of humanized lymph is at all times available, as there has been in this city for the past 20 years.

Mr. Ruttonjee, as will be seen, operated on 202 children, and 47 of the number completely failed, 41 in transferring lymph from the animals, and 6 in transmission from child to child. The vesicles were at first very small and few, one or at most two, resulting from six insertions. In these respects, however, they gradually improved after several transmissions, although to the last their appearance was spurious, and maturation premature, the edges ill-defined and the central depressions indistinct. The cicatrices were equally unsatisfactory. In three-fourths of the number examined, the surface was perfectly smooth, without the slightest trace of any depression; while in

the remainder there were here and there some slightly foveolated, but only very partially and imperfectly at most. I do not consider that any of these children are protected, and concur with Mr. Ruttonjee that all must be revaccinated.

This experience I trust will be accepted as conclusive of the inutility of animal lymph, at least as regards this city, believing as I do, that any further experiments in the same direction would probably give rise to distrust, and thus prove detrimental to the interests of legitimate vaccination.

REMARKS on a few experiments made on the subject of Animal Vaccination by Sub-Assistant Surgeon RUTTONJEE HORMUSJEE, *in Medical charge Baicherdass Dispensary in Ahmedabad.*

This subject was commenced at the request of Dr. Muncherjee Byramjee Colah, Superintendent of Vaccination, Northern Circle, who handed over to me an inoculated heifer on the 12th November 1870. From this date up to the 12th February 1871, thirteen heifers have been inoculated. The lymph was supplied once by Dr. Muncherjee himself, twice by Dr. Blanc, and twice by Mr. Anunta Chundroba of Bombay. When lymph was transferred from one heifer to another, it was invariably done on the 6th day after the operation. Mostly valvular punctures were made, but a few incisions were also tried. The short experience I lately had on the subject seems to show that the former are to be preferred to the latter.

2. I would next give a summary of the results. From the 12th November to the 7th December 1870, six heifers were inoculated, one after another, under the hope that by passing the lymph through a succession of calves the success of the process might be ensured. The result however was different. The first four heifers took the inoculation very well, especially the 3rd and the 4th, but in the fifth, the vesicles were small and few in number. In the sixth the failure was complete; only a few of the punctures were elevated into so many small pimples and nothing more. It would thus seem that the lymph, first used on the 12th November, lost its effects gradually by passing through the bodies of six heifers, and here may be said to be the end of the first series of experiments. The lymph was lost, and nothing further could be done until a fresh supply of lymph was obtained from Bombay.

3. But as just mentioned, the 3rd and the 4th heifers took the inoculation very well; well marked and large vesicles were obtained. Opportunity, therefore, was for the first time taken to vaccinate some children with the lymph of these heifers. Between the 27th November and the 2nd December 1870 twenty-five children were vaccinated. But all these proved failures without an exception, as will be seen in the appended table. It may therefore be inferred that the lymph was good enough to bring out vesicles on the heifers, but when transferred to the human subject, its goodness failed.

4. On the 27th December 1870, Mr. Anunta Chundroba kindly forwarded twelve tubes charged with heifer-lymph. The next day a heifer was procured and the lymph used in twelve punctures, all of which failed.

5. On the 8th January 1871 Dr. Blanc forwarded to me twelve ivory points. This lymph also failed. But the same Officer sent to me six more tubes on the 14th idem, and this succeeded very well on a heifer. On the 6th day the lymph of this heifer was transferred to another heifer and this succeeded most admirably. On the 25th January therefore an opportunity was taken to vaccinate some children. Ten children were vaccinated ; of these three succeeded and seven failed.

6. But from the last successful heifer another was inoculated on the 25th and from it another on the 31st January. That of the 25th was a partial success, but the last one was a failure. Here again the lymph seems to have lost its effects by passing through the bodies of five heifers, although on the third heifer the result was quite successful.

7. On the 7th February Mr. Anunta Chundroba sent me a second supply of lymph in six tubes. The lymph of these as well as some other which I had myself collected from a previous successful heifer, was used on a fresh heifer, but the result was not successful; very few really good vesicles rose, from which three children were vaccinated with success on the 12th February.

8. It will thus be seen from the above account, or from the appended table, that up to the 12th February 1871 fifty-three children were vaccinated directly by the heifer lymph; of these twelve proved successful, at all events vesicles formed, which were somewhat inferior to the ordinary Jennerian vesicle, as more particularly stated below.

9. At this stage an idea occurred to me that the lymph of these somewhat inferior vesicles might improve by passing successively through the bodies of several children, and with this view the lymph, which was obtained from the arms of the twelve children, alluded to in the last paragraph, was propagated till about the 25th March 1871, when it was found that from the 12th November 1870, the date of the commencement of these experiments, up to the last operation with the new lymph, 202 children had been vaccinated. Of these 47 were failures and the rest (155 cases) succeeded in so far as vesicles resulted, but they were not typical. They matured on the 7th day instead of the 8th day ; thus they were one day too early in maturing. Besides this, when the scabs fell off, the resulting cicatrices were found to be perfectly smooth, with a few rare exceptions in which depression was present.

10. Hence on comparing the appearances of the vesicle produced by the new lymph with those resulting from the current human lymph, there was no doubt left as to the inferiority of the former ; the latter invariably producing well developed Jennerian vesicles with the characteristic depressed cicatrix. For the above reasons, further vaccine operations with the new lymph have been put a stop to. Hence also arises the necessity of re-vaccinating all the two hundred and two children alluded to in the last paragraph, with the old or current human lymph.

11. The attached is a table showing the dates on which vaccinations were performed on children, with their results. It is taken from the registers of the two Municipal vaccinators, in whose monthly returns these vaccinations were included.

TABLE showing the number of Vaccinations performed with animal lymph in the Baicherdass Dispensary, Ahmedabad.

Dates on which Vaccinations were performed.	Total Vaccinated.	Number of Vesicles that rose.	Failed.	Total.
27th November 1870	11	.....	11	11
28th Ditto	4	.....	4	4
2nd December 1870	10	.....	10	10
25th January 1871	10	3	7	10
31st Ditto	7	2	5	7
1st February 1871	2	2	.....	2
5th Ditto	4	.....	4	4
7th Ditto	2	2	.....	2
12th Ditto	3	3	.....	3
13th Ditto	3	2	1	3
14th Ditto	2	2	.....	2
18th Ditto	1	1	.....	1
19th Ditto	4	4	.....	4
20th Ditto	5	5	.....	5
21st Ditto	3	3	.....	3
24th Ditto	1	1	.....	1
25th Ditto	2	2	.....	2
26th Ditto	11	11	.....	11
27th Ditto	8	8	.....	8
28th Ditto	4	3	1	4
3rd March 1871	3	3	.....	3
4th Ditto	4	4	.....	4
5th Ditto	19	19	.....	19
6th Ditto	9	9	.....	9
7th Ditto	5	5	.....	5
10th Ditto	2	2	.....	2
11th Ditto	10	10	.....	10
12th Ditto	11	9	2	11
13th Ditto	11	9	2	11
14th Ditto	5	5	.....	5
17th Ditto	1	1	.....	1
18th Ditto	4	4	.....	4
19th Ditto	13	13	.....	13
20th Ditto	8	8	.....	8
Total.....	202	155	47	202

GODRA.

Operations performed by Sub-Assistant Surgeon SARUPLAL BALLUCKRAM, in charge Dispensary.

Population..... No cost.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70.....	.....	.....	.....	.....	.....
1870-71.....	116	116	.....	94	84

In furnishing this brief report of vaccination for the last six months, I have the honour to state that 115 persons were primarily vaccinated in all; of these 95 were successful, 18 unsuccessful or doubtful, and of two nothing is known. The percentage of successful cases excluding those unknown from the total was 84 in primary vaccinations. There was only one case of re-vaccination, and that was successful. The Dispensary has been opened only lately. I have often heard mothers complaining that they do not want to have their children vaccinated during the hot season; and for this they give a peculiar explanation, that children vaccinated in this season suffer generally from small-pox. From my short experience I can say that the people on the whole understand the benefits of vaccination, and bring their children for vaccination very willingly. The Bhoras—who are included amongst the Mohamedans, and forming a pretty large portion of the population, have a great objection to bring their children for vaccination to the Dispensary, and this is simply because their women cannot go out of doors. If the Patel of this place, who collects children for vaccination, were to exert his influence a little more than what he does at present, the number of vaccinated children would be increased. The state of lymph was as a rule good. In a few cases in the month of December, vaccination was practised from a heifer inoculated with human lymph, but all these cases proved unsuccessful. No cases of small-pox occurred during the period under report.

DHOOLIA.

One Municipal Vaccinator under the Civil Surgeon, Assistant Surgeon G. BATNBRIDGE.

Population 11,267. Total cost Rs. 264. Average cost of each successful vaccination 5 annas and 4 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	996	.....	.....	895	98·9
1870-71	796	.....	200	793	99·8

There has been a considerable decrease in the number of vaccinations performed during the past year. I thinkhowever that this is only temporary, and is attributable to the absence of the usual number of subjects in the town owing to the fact of few children having been left unvaccinated whose parents were willing to submit them for operation. The number may probably rise again during the next year. Vaccination has been carried on without intermission twice every week from arm-to-arm ; the supply of lymph has therefore been quite regular. Its quality has been excellent, and its resulting vesicles every thing that could be desired, with few exceptions. I have not noticed any signs of degeneration of our lymph, which produces most excellent vesicles in subjects with fair skins, especially if the weather be favourable. It is creditable to the vaccinator that he has maintained an uninterrupted supply of lymph in two sets of vaccinated subjects every week without receiving any from other places.

2. The village officials have given proper assistance to the vaccinator since my last report.

3. I believe that a large number of Brahmin and Marwaree children are unvaccinated. No amount of persuasion will induce some of these people to submit their children for operation. I have little doubt that, were an epidemic of small-pox to occur in the place, many children of the classes mentioned would be attacked.

4. The vaccinator has been paid by the Municipality during the year.

5. Only one case of small-pox has occurred in the town so far as I am aware ; there has certainly been no epidemic.

AHMEDNUGGUR.

One Government Vaccinator under the Civil Surgeon, Surgeon H. T. DANN, B.A.

Population 40,000. Total cost Rs. ..... Average cost of each succesful vaccination annas and pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	1,045	.....	.....	978	93·6
1870-71	1,100	55	.....	1,001	96·

I have much pleasure in bringing before you the present vaccination report, showing as it does an increase in the actual vaccination of 1870-71 over that of the previous year. The numbers stand respectively 1,045 and 1,100, being an increase of 55 operations, and also in 1869-70 only 219 were vaccinated in the camp and cantonment against 251, being an increase of 32. The largest number of vaccinations were made in the months of March, May and August, the latter showing 106. The results were, successful 1,001, unsuccessful 73, unknown 26. No small-pox has occurred during the past year.

KOTREE.

One Municipal Vaccinator under the Civil Surgeon, Assistant Surgeon J. Roche, M.D.

Population 20,626. Total cost Rs. 268. Average cost of each successful vaccination 5 annas and 8 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	784	.....	.....	707	93·2
1870-71	1,065	279	.....	955	95·2

There is an increase in the number vaccinated in the past year, as compared with the preceding, of 279. Vaccination has progressed favourably, and has only been objected to by some Cutchees and Parsees. Their reasons are that small-pox is one of the means of punishment used, and especially presided over by Sitla Mata, the female spouse of Sheva Devi, or Mahadev, hence the names Sitla and Matha. I will take the liberty of introducing here a few remarks on animal vaccination. There are some

Hindoos who consider lymph analagous to milk, a secretion, and will be delighted to have cow-lymph inserted in their skin as a conservative against small-pox. The majority and all the higher caste Hindoos look on lymph as modified or altered blood, and not only will refuse to have that of the cow introduced into their bodies, but will use all their influence to have animal vaccination discontinued if it be introduced, lest the lymph from the arm of a child, which they would not otherwise object to, may be related to that from the cow.

2. The lymph throughout the year has been good.

3. I am not aware that any improvement can be made, and I am informed that already influential members of the Hindoo community of Hydrabad and Kotree have been deliberating to petition against the introduction of animal vaccination.

KURRACHEE.

One Government Vaccinator under the Civil Surgeon, Assistant Surgeon N. Hopkins.

Population 100,000. Total cost Rs. 313, of which Rs. 180 was paid by Government and the rest by the Municipality. Average cost of each successful vaccination 2 annas.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	3,933	.....	.....	3,422	91·9
1870-71	2,765	.....	1,168	2,405	94·8

This year's returns contrast very unfavourably with the last year's. The decrease is due to the former vaccinator (who had for many years worked very satisfactorily) neglecting his work, and which ultimately compelled me to have him discharged from the Service for misconduct. The present vaccinator appears to be anxious to give satisfaction, but the number vaccinated is far below the last year's, but I hope that as he gets more used to the people, he will be able to show an improvement in this respect.

2. Small-pox was prevalent for three months in this year.

ADEN.

One Government Vaccinator under the Civil Surgeon, Surgeon R. W. JAMES, M.D.

Population 25,000. Total cost Rs. 216. Average cost of each successful vaccination 5 annas and 11 pies.

Years.	Total Vaccinated.	Compared with the preceding year.		Successfully Vaccinated.	Percentage of success.
		Increase.	Decrease.		
1869-70	844	.....	.....	692	81·9
1870-71	691	.....	153	582	84·2

There has been a decrease during the year in the total number vaccinated, and in consequence the cost of each vaccination is increased by nearly 5 pies. No slaves were brought to Aden by Her Majesty's Steamers, and as small-pox ceased during the month of May, the two great causes of the increase during the preceding two years were wanting.

During a short time in May the supply of lymph failed, but the Superintendent Medical Department afforded me some in tubes lately received by him from England; it turned out very good, and to this cause I attribute a successful percentage of 84·2.

TABLES

OF

VACCINATION RETURNS, &c.,

FOR

1870-71.

A.—VACCINE DEPARTMENT.

STATEMENT No. 1, *showing particulars of Vaccinations in each Circle of Superintendence in Bombay Presidency, during the Year* 1870-71.

1	2	3		4		5		6		7	8	9													10				11		12
												Primary Vaccine Operations.													Re-vaccinations.				Percentage of successful Cases, excluding those "unknown" from the Total.		
												A		B.					C.					D.	A.	B.	C.	D.			
												Sex.		Caste.					Age.		Results.										
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1870-71.	1869-70.	Number of Vaccinators. 1870-71.	1869-70.	Total Number of Persons vaccinated. 1870-71.	1869-70.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.		Population of Area included in last column.	Name of Taloka or Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Castes.	Under one year.	Above one year.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccination.	In Re-Vaccination.	Average Number of Persons vaccinated by each Vaccinator.
CENTRAL.	Assistant Surgeon.	...	...	2	2	Vaccinators acting as Clerks in Superintendent's Office.																									
										Sq. Miles.																					
		...	...	1		1,773	1,880	Poona Collectorate		561	Haveily	920	853	...	1,540	42	...	191	582	1,191	1,589	117	67	1,773	...	...	...	...	93·1	...	
		...	...	2		1,588	1,651			3	Poona City	793	791	6	1,439	128	2	9	813	771	1,291	80	213	1,584	...	2	2	4	84·6	...	
		...	...	1		1,094	60[illegible]			314	Mawul	566	524	...	978	16	...	96	250	840	969	81	40	1,099	1	...	3	4	92·2	100·	
		...	...	2		1,818	1,183			657	Kheir	961	855	...	1,593	59	...	164	518	1,298	1,550	137	129	1,816	2	...	...	2	92·	100·	
		...	...	1	8	389	1,178			552	Jooneer	176	159	...	286	48	...	1	95	240	226	50	59	335	16	18	20	54	81·9	47·	
		...	...	1		1,877	2,936			371	Purundhur	981	889	...	1,530	39	...	301	893	977	1,805	7	58	1,870	6	...	1	7	99·6	100·	
		...	...	1		496	512			448	Seroor	293	203	...	394	32	...	70	49	447	402	79	15	496	...	...	...	...	83·2	...	
		...	...	1		1,523	987			525	Indapoor	805	718	...	1,294	38	...	191	435	1,088	1,436	48	39	1,523	...	...	...	...	96·7	...	
		...	...	2		3,264	1,033			844	Bhimthurry	1,612	1,652	...	2,909	91	...	264	979	2,285	2,995	80	189	3,264	...	...	...	...	97·4	...	
		...	...	1		1,787	2,346	Ahmednagur Collectorate.		544	Nuggur	861	831	4	1,401	111	...	176	571	1,121	1,574	96	22	1,692	45	43	7	95	94·2	51·1	
		...	...	1		1,597	...			500	Rahooree	781	785	6	1,381	67	...	112	191	1,375	1,448	105	13	1,566	21	5	5	31	93·2	80·7	
		...	...	...		...	930			590	Parnair	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		...	...	1	5	2,273	...			500	Shreegoonda	1,153	1,114	1	1,981	101	...	184	892	1,375	1,782	11	474	2,267	4	...	2	6	99·3	100·	
		...	...			166	2,128			408	Kurjut	82	84	...	154	9	...	3	124	42	128	2	36	166	...	...	...	...	98·4	...	
		...	...			427	1,495			621	Newassa	230	198	...	383	21	...	22	127	299	304	87	35	426	...	...	1	1	87·7	...	
		...	...	1		734	1,468			577	Ankola	373	357	...	711	4	...	15	192	538	550	89	91	730	4	...	...	4	86·	100·	
		...	...	1		1,152	...			550	Jamkheir	608	535	...	1,069	66	...	17	325	818	1,123	16	4	1,143	3	6	...	9	98·6	33·3	
		...	...	1		1,810	1,738			505	Kopergaon	847	884	...	1,544	78	...	109	220	1,511	1,659	62	10	1,731	79	...	...	79	96·4	100·	
		...	...	1		755	851			475	Sungumnair	378	377	...	672	33	...	50	195	560	426	237	92	755	...	...	...	...	64·2	...	
		...	...	...		...	...			682	Sheogaon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	2		2,447	...	Collectorate.		2,106	Nassick	1,217	1,230	1	2,099	32	...	315	540	1,907	2,198	95	154	2,447	...	...	...	...	95·8	...	
		...	...	1		480	564			...	Do. City	249	225	22	405	29	...	18	265	206	303	56	115	474	...	6	...	6	78·3	...	
		...	...	...		...	...			1,692	Egutpoora	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	1		343	2,126			400	Niphar	168	175	...	244	11	...	88	170	173	310	3	30	343	...	...	...	...	95·8	...	
		...	...	...	7	1,858	...			756	Chandore	958	900	...	1,337	81	...	440	452	1,406	1,718	25	115	1,858	...	...	...	...	98·5	...	
		...	...	...		...	1,817			440	Sinnur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

P. S. Turnbull, M.D.,	...	...	1		2,293	1,604	Nassick	775	54,825	Malligaum ...	1,141	1,115	8	2,065	50	...	133	674	1,582	2,162	23	71	2,256	16	17	4	37	98·9	48·5	1,340
	...	...	1		1,919	2,703		966	88,537	Baglan	1,044	873	...	1,828	53	...	36	333	1,584	1,887	7	23	1,917	2	...	...	2	99·6	100·	
	...	...	...		...	...		1,248	19,773	Nangaon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...		...	769		401	47,868	Sawergaon ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1		2,402	1,683		718	59,678	Dindoree	977	1,017	1	1,810	9	...	174	327	1,667	1,907	57	30	1,994	353	25	30	408	97·1	93·3	
	...	...	2		3,036	2,418	Sholapoor Collectorate.	1,672	146,245	Sholapoor.....	1,571	1,464	...	2,359	345	...	331	1,744	1,291	2,846	60	129	3,035	...	...	1	1	97·9	...	
	...	...	1		3,012	2,402		1,200	82,525	Marheh	1,582	1,430	...	2,520	129	...	363	419	2,593	3,012	...	...	3,012	...	...	...	...	100·	...	
	...	...	1		2,431	2,875		1,680	84,826	Kurmulla.....	1,288	1,143	...	2,193	104	...	134	226	2,205	2,237	97	97	2,431	...	...	...	...	96·2	...	
	...	...	1	8	96	537		616	80,126	Punderpoor ...	401	395	...	705	23	...	68	416	380	670	61	65	796	...	...	...	...	91·6	...	
	...	...	1		937	792		616	60,486	Sangola.....	463	474	...	815	48	...	74	216	721	735	35	167	937	...	...	...	...	95·4	...	
	...	...	1		537	2,293		1,167	113,972	Barsee	259	278	...	457	49	...	31	231	306	313	41	183	537	...	...	...	...	87·2	...	
	...	...	2		3,313	...	Khandeish Collectorate.	759	63,672	Dhoolia.....	1,751	1,494	5	2,917	199	3	121	1,459	1,786	3,222	5	18	3,245	55	13	...	68	99·8	80·8	
	...	...	1		1,952	384		874	111,395	Sowda	940	1,012	...	1,776	103	...	73	1,453	499	1,752	90	110	1,952	...	...	...	...	95·1	...	
	...	...	1		623	1,572		323	51,060	Nusseerabad	313	309	...	584	36	...	2	204	418	582	10	30	622	...	1	...	1	98·3	...	
	...	...	1		2,487	...		459	68,262	Errundole.....	1,271	1,031	3	2,144	102	...	53	400	1,902	2,130	81	91	2,302	132	2	51	185	96·3	98·6	
	...	...	1		2,203	...		518	55,266	Jamnair	1,164	1,039	...	1,971	138	...	94	396	1,807	2,203	...	...	2,203	...	...	...	...	100·	...	
	...	...	1		746	770		762	26,698	Seerpoor	386	360	...	730	16	...	...	389	357	687	50	9	746	...	...	...	...	93·2	...	
	...	...	1		1,867	...		474	34,506	Shadah	973	894	...	1,834	33	...	...	92	1,775	1,894	3	60	1,867	...	...	...	...	99·8	...	
	...	...	1		159	...		1,286	21,550	Tulloda	85	74	...	149	6	...	4	14	145	142	16	1	159	...	...	...	...	89·8	...	
	...	...	1	6	136	2,218		640	36,544	Nundurbar ...	73	63	...	129	7	...	...	11	125	135	1	...	136	...	...	...	...	99·2	...	
	...	...	1		956	...		449	35,631	Chaleesgaon. .	467	489	...	865	49	...	42	252	704	953	...	3	956	...	...	...	...	100·	...	
	...	...	1		88	1,176		1,234	46,128	Pimpulnair ...	40	48	...	88	...	...	...	32	56	86	2	...	88	...	...	...	...	97·7	...	
	...	...			924	404		539	68,853	Pachora.....	474	450	...	852	18	...	54	125	499	889	30	5	924	...	...	...	...	96·7	...	
	...	...	1		672	...		504	41,843	Chopra	374	296	1	595	15	...	59	67	603	664	1	5	670	2	...	...	2	99·8	100·	
	...	...	1		2,422	2,231		538	73,415	Amulnair	1,211	1,170	...	2,290	112	...	69	383	1,998	2,252	64	65	2,381	28	3	10	41	97·2	90·3	
	...	...	1		1,911	...		505	56,706	Virdul	939	972	...	1,886	86	...	439	385	1,526	1,798	...	113	1,911	...	...	...	...	100·	...	
	...	...	...		...	827		563	69,569	Bhosawul.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Sattara Collectorate.	432	105,661	Sattara	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1	1	2,104	1,609		400	74,568	Tasgaon	1,196	904	...	1,812	137	...	151	1,855	245	2,081	13	6	2,100	4	...	...	4	99·3	100·	
	...	...	1	1	761	339		893	53,870	Jowlee	378	383	...	677	6	...	78	220	541	709	44	8	761	...	...	...	...	94·1	...	
	...	...	1	1	1,193	539		802	82,857	Waie	589	604	...	1,017	26	...	150	454	739	1,089	62	42	1,193	...	...	...	...	94·6	...	
	...	...	1	1	730	870		840	77,051	Khotow	365	363	...	668	29	...	33	251	479	686	27	17	730	...	...	...	...	96·2	...	
	...	...	1	2	877	1,877		720	77,750	Walwa	480	397	...	838	35	...	4	273	604	840	29	8	877	...	...	...	...	96·6	...	
	...	...	1	2	1,144	1,251		632	62,564	Mán	583	561	...	942	30	...	172	306	838	1,052	42	50	1,144	...	...	...	...	96·1	...	
	...	...	1	2	1,835	2,199		487	121,694	Karrar	1,044	788	...	1,702	34	...	96	71	1,761	1,785	19	28	1,832	3	...	...	3	98·9	100·	
	...	...	1	1	1,166	972		720	77,750	Khanapoor ...	588	576	...	1,021	69	...	74	595	569	1,044	120	...	1,164	2	...	...	2	89·7	100·	
	...	...	1	1	2,225	2,789		810	97,403	Patun.....	1,112	1,113	...	1,977	18	...	230	303	1,922	2,051	20	154	2,225	...	...	...	...	99·	...	
	...	...	1	1	984	875		584	53,586	Malsecrus.....	534	443	...	848	116	...	13	401	576	792	101	84	977	3	3	1	7	88·6	50·	
	...	...	1	1	920	1,074		350	71,974	Koregaon	459	461	...	830	29	...	61	242	678	857	35	28	920	...	...	...	...	96·	...	
	...	...	1	1	1,341	1,612	Native States.	960	26,167	Peint	676	624	...	1,282	13	...	5	545	755	1,152	142	6	1,300	17	21	3	41	69·	44·7	
	...	...	1	1	1,185	1,023		420	61,000	Akulkote	622	557	...	897	165	...	117	294	885	1,054	93	32	1,179	6	...	...	6	91·9	100·	
	...	...	1	1	920	887		1,044	111,729	Bhore.....	495	424	...	820	9	...	90	140	779	908	8	3	919	1	...	...	1	99·1	100·	
	...	...	1	1	843	925		1,620	56,845	Jutt.....	404	437	...	785	49	...	7	380	461	802	35	4	841	2	...	...	2	95·8	100·	
	...	...	1	1	249	481		246	58,980	Attapadee.....	152	97	...	246	3	...	...	30	219	249	...	...	249	...	...	...	...	100·	...	
	...	...	1	1	1,173	1,093		512	49,314	Phulton.....	576	552	...	950	58	...	120	599	529	1,032	90	6	1,128	17	25	3	45	92·	40·4	
Total.	...	...	65	56	87,123	75,494		49,154	4,753,493		44,452	41,513	58	75,619	3,692	5	6,591	26,387	59,578	79,037	3,177	3,751	85,965	824	190	144	1,158	96·1	81·2	1,340

1	2	3		4		5		6	7	8	9												10				11		12
											Primary Vaccine Operations.												Re-Vaccinations.				Percentage of Successful Cases, excluding those "unknown" from the Total.		
											A		B.					C.				D.								
											Sex.		Caste.					Age.		Results.										
Circle.	Name and Rank of Superintendent.	1-70-71.	1-69-70.	1870-71.	1869-70.	1-70-71.	1869-70.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.	Population of Area included in last column.	Name of Taluoka or Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccination.	In Re-Vaccination.	Average Number of Persons Vaccinated by each Vaccinator.
				Number of Vaccinators.		Total Number of Persons vaccinated.																							
									Sq. Miles.																				
Southern.		...	...	2	2	Vaccinators in the Superintendent's Office.																							
	Assistant Surgeon.	...	...	1	1	2,043	1,749	Belgaum Collectorate.	1,440	100,028	Belgaum	1,079	959	50	1,927	17	...	44	272	1,766	1,929	57	52	2,038	5	...	...	5	97·1	100·	2,043
		...	...	1	1	1,309	404		910	114,226	Sumpgaum	695	695	...	1,101	173	...	26	267	1,034	1,111	102	87	1,300	...	...	...	...	91·5	...	1,300
		...	...	1	1	2,281	1,735		1,404	100,885	Pursghur	1,204	1,077	...	2,078	186	...	17	311	1,970	2,272	6	3	2,281	...	...	...	...	99·7	...	2,281
		...	...	1	1	1,485	1,579		1,872	83,707	Gokak	844	641	2	1,373	110	...	...	772	713	1,428	32	25	1,485	...	...	...	...	97·1	...	1,485
		...	...	1	1	1,887	1,748		2,592	200,487	Chickoree	1,026	861	...	1,694	144	...	49	219	1,668	1,845	16	26	1,887	...	...	...	...	99·1	...	1,887
		...	...	1	1	1,842	1,435		1,196	63,808	Beedee	1,012	830	75	1,582	130	...	52	725	1,117	1,675	94	73	1,842	...	...	...	...	94·6	...	1,842
		...	...	1	1	640	227		2,400	90,029	Uthnee	335	305	...	544	70	...	26	259	381	620	19	1	640	...	...	...	...	97·	...	640
		...	...	1	1	1,931	1,710	Dharwar Collectorate.	428	102,980	Dharwar	1,062	869	...	1,721	183	...	27	254	1,677	1,912	12	7	1,931	...	...	...	...	99·3	...	1,931
		...	...	1	1	862	1,472		567	84,613	Nowlgoond	479	369	...	764	61	...	17	133	709	805	31	6	842	1	15	4	20	96·2	62·	862
		...	...	2	1	1,230	1,366		341	76,999	Bunkapoor	655	575	...	966	230	...	34	127	1,103	1,099	53	78	1,230	...	...	...	...	95·3	...	615
		...	...	1	1	1,383	1,410		295	60,799	Hangul	759	697	...	1,152	224	...	...	17	1,359	1,230	121	25	1,376	6	...	1	7	91·	100·	1,383
		...	...	1	1	1,692	869		310	94,583	Hooblee	915	779	3	1,458	168	...	63	256	1,436	1,659	26	7	1,692	...	...	...	...	98·4	...	1,692
		...	...	1	1	921	333		493	73,082	Ranebednoree	525	396	...	719	198	...	4	11	910	826	58	37	921	...	...	...	...	93·4	...	921
		...	...	1	1	1,047	564		403	69,804	Koade	606	423	...	953	73	...	...	12	1,017	937	65	27	1,029	14	2	2	18	93·5	87·5	1,047
		...	...	1	1	854	947		403	83,047	Kurjagee	469	385	...	736	102	...	16	49	805	793	23	38	854	...	...	...	...	97·3	...	854
		...	...	1	1	1,456	1,459		724	45,386	Kulghutgee	778	678	20	1,247	151	...	38	194	1,262	1,445	11	...	1,456	...	...	...	...	99·2	...	1,456
		...	...	1	1	523	618		366	64,828	Roan	264	259	...	512	11	...	...	248	275	466	24	33	523	...	...	...	...	95·1	...	523
		...	...	1	1	684	725		1,350	104,101	Dumbul	355	329	1	624	59	...	...	140	544	617	51	16	684	...	...	...	...	92·3	...	684
		...	...	...	...	...	...	North Canara Collectorate.	360	40,133	Carwar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		...	...	1	1	1,269	1,308		660	84,038	Coompta	693	576	38	1,085	26	...	120	88	1,181	1,145	107	17	1,269	...	...	...	...	91·4	...	1,269
		...	...	1	1	1,447	1,245		400	80,388	Honore	804	640	144	1,293	86	...	11	80	1,364	1,382	55	7	1,444	3	...	...	3	96·1	100·	1,447
		...	...	1	1	379	676		550	52,848	Sircy	265	114	...	375	4	...	...	4	375	363	13	3	379	...	...	...	...	96·5	...	379
		...	...	1	...	624	581		640	29,621	Yellapoor	362	253	10	571	30	...	4	29	586	542	27	46	615	7	...	2	9	95·2	100·	624
		...	...	1	...	260	323		594	38,112	Siddapoor	157	103	...	250	10	...	...	2	258	252	4	4	260	...	...	...	...	98·4	...	260
		...	...	1	1	885	1,152		1,110	47,450	Hulliall	433	400	28	706	128	...	21	221	662	870	10	3	883	2	...	...	2	98·8	100·	885
		...	...	2	1	1,892	2,643	Kuladghee Collectorate.	2,376	97,891	Bagulkote	954	937	1	1,660	173	...	57	823	1,068	1,796	53	42	1,891	1	...	...	1	97·1	100·	946
		...	...	...	...	...	...		864	85,703	Hoongoond	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		...	...	1	...	655	...		1,350	81,643	Bughewaree	347	308	...	518	89	...	48	94	561	525	51	79	655	...	...	...	...	91·1	...	655
		...	...	1	1	1,552	1,714		1,555	108,696	Badamee	847	705	...	1,474	68	...	10	889	663	1,481	22	49	1,552	...	...	...	...	98·5	...	1,552
		...	...	...	...	...	...		726	74,987	Moodebehall	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		...	...	1	1	450	4,407		1,683	95,986	Iudec	218	232	...	394	52	...	4	134	316	351	78	21	450	...	...	...	...	81·8	...	450
		...	...	1	...	874	...		1,555	98,990	Sindghee	415	427	...	701	138	...	33	183	689	827	23	22	872	...	2	...	2	97·2	...	874
		...	...	...	1	...	1,022		1,386	64,020	Beejapoor	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

J. Rapt,	...	...	1	1	1,005	772		1,207	173,388	Sanglee	526	479	...	908	97	...	...	511	494	954	47	4	1,005	...	...	...	...	95·3	...	1,005
	...	...	1	1	916	983	Native States. Southern Maratha States.	574	79,799	Meeruj, 1st ...	479	437	...	807	101	...	8	552	364	901	...	15	916	...	...	...	...	100·	...	916
	...	...	1	1	455	408		197	47,060	Do. 2nd ...	243	212	...	432	23	...	...	261	194	452	3	...	455	...	...	...	...	99·3	...	455
	...	...	1	1	481	176		271	29,786	Koorundwar, 1st	258	223	3	422	49	...	7	61	420	464	14	3	481	...	...	...	...	96·8	...	481
	...	...	1	1	294	384		177	22,890	Do. 2nd ...	151	143	...	206	51	...	37	63	231	279	11	4	294	...	...	...	...	96·2	...	294
	...	...	1	1	696	686		317	49,829	Moodhole	354	342	...	659	37	...	...	31	665	553	109	34	696	...	...	...	...	83·5	...	696
	...	...	1	1	883	769		189	33,000	Ramdroog ...	463	420	...	808	30	...	45	121	762	845	16	22	883	...	...	...	...	98·1	...	883
	...	...	1	1	357	454		Unkn.	120,051	Jumkhundee.	203	154	...	318	39	...	...	188	169	323	33	1	357	...	...	...	...	90·7	...	357
	...	...	1	...	123	...		Do.	Unkn.	Savanoor	64	59	...	64	57	...	2	4	119	112	3	8	123	...	...	...	...	97·3	...	123
	...	...	1	1	1,442	1,611		360	14,748	Keshalghur...	758	648	...	1,288	29	...	125	166	1,276	1,397	30	15	1,442	...	...	...	...	97·8	...	1,442
	...	...	1	1	841	896		567	43,543	Echulkurnjee.	426	398	...	731	51	...	42	566	258	784	39	1	824	12	5	...	17	95·2	70·5	841
	...	...	1	1	1,152	689		252	31,287	Kagull	670	482	8	1,108	36	...	...	394	758	1,146	6	...	1,152	...	...	...	...	99·4	...	1,152
	...	...	1	1	1,365	1,221		486	73,393	Gudhingluz...	765	600	5	1,310	29	...	21	252	1,113	1,355	6	4	1,365	...	...	...	...	99·5	...	1,365
	...	...	1	1	1,185	1,375		486	29,845	Bowrah.....	577	571	...	996	23	...	129	211	937	1,024	59	65	1,148	4	32	1	37	94·5	11·1	1,185
	...	...	1	1	1,984	1,566	Kolapoor State.	540	66,463	Pannalla	1,013	912	...	1,774	16	...	135	665	1,260	1,886	23	16	1,925	47	7	5	59	98·7	87·	1,984
	...	...	1	1	1,335	1,518		900	54,794	Bhooderghur.	685	650	...	1,302	5	...	28	132	1,203	1,332	3	...	1,335	...	...	...	...	99·7	...	1,335
	...	...	1	1	992	1,026		243	105,022	Sheerole	543	449	...	914	73	...	5	629	363	954	3	5	992	...	...	...	...	99·6	...	992
	...	...	1	1	535	544		180	21,653	Torgull	324	211	...	498	21	...	16	...	535	530	5	...	535	...	...	...	...	99·	...	535
	...	...	1	1	763	943		598	24,484	Auzara	363	376	5	696	9	...	29	199	540	692	37	10	739	10	10	4	24	94·9	50·	763
	...	...	1	1	3,476	3,165		506	114,445	Kolapoor Peta and Station.	1,438	1,198	3	2,510	123	...	...	618	2,018	2,524	103	9	2,636	455	385	...	840	96·	54·1	3,476
	...	...	1	1	544	1,032	Municipalities.	.....	35,278	Hooblee	288	256	6	411	124	...	3	92	452	490	50	4	544	...	...	...	...	90·7	...	544
	...	...	1	1	313	334		.....	8,891	Beejapoor.....	166	147	...	278	35	...	...	138	175	269	35	9	313	...	...	...	...	88·4	...	313
	...	...	1	1	637	668		.....	26,366	Belgaum	333	304	1	563	17	1	1	336	301	617	19	1	637	...	...	...	...	97·	...	637
	...	...	1	1	374	637		.....	6,032	Kulladghee ...	214	160	1	280	49	...	35	161	213	321	45	8	374	...	...	...	...	87·7	...	374
Total	...	...	56	52	56,496	57,259		†39,857	3,000,848	*	28,912	26,540	407	49,383	4,272	1	1,389	13,164	42,288	52,437	1,943	1,072	55,452	567	458	19	1,044	96·4	55·3	1,008
Western.																															
H. J. Blanc, M.D., Assistant Surgeon.	None.	None.	12/12	12/12	One Vaccinator in Superintendent's Office.																										
			11/12	7/12	1,868	1,021	Tanna.	250	50,144	Bassein.....	962	866	276	1,536	16	...	...	732	1,096	1,808	4	16	1,828	40	...	...	40	99·8	100·	
			3/12	7/12	...	449		285	41,835	Bhewndy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
			11/12	...	2,298	...		215	54,328	Callian	1,038	992	...	1,939	57	...	34	624	1,406	1,400	250	380	2,030	94	83	91	268	84·9	53·1	
			6/12	6/12	883	431		696	67,930	Dhano	459	424	...	850	...	21	12	55	828	883	...	...	883	...	...	...	...	100·	...	
			12/12	13/12	2,089	2,439		344	63,512	Kurjut	975	979	...	1,789	48	...	117	497	1,457	1,907	...	47	1,954	59	59	17	135	100·	50·	
			12/12	8/12	1,929	1,200		330	51,465	Mahim	917	972	9	1,856	24	...	...	811	1,078	1,808	32	49	1,889	40	...	...	40	98·2	100·	
			11/12	8/12	2,115	738		520	47,952	Moorbar	1,104	1,011	...	2,071	31	...	13	228	1,887	1,833	176	106	2,115	...	...	...	...	91·2	...	
			20/12	25/12	2,898	993		240	75,324	Panwell.....	1,493	1,372	3	2,775	35	...	52	925	1,940	2,607	100	158	2,865	9	24	...	33	96·3	27·2	
			17/12	12/12	964	279		170	60,561	Salsette	586	378	88	813	38	3	22	344	620	879	44	41	964	...	...	...	...	95·2	...	
			9/12	5/12	1,519	816		169	34,894	Shapoor.....	769	703	...	1,459	13	...	...	539	933	1,215	71	186	1,472	20	12	15	47	94·4	62·5	
			6/12	10/12	849	2,453		915	22,250	Warra	436	413	...	838	9	...	2	299	550	701	54	94	849	...	...	...	...	92·8	...	
			12/12	4/12	2,625	582	Colaba ...	183	56,373	Alibagh.....	1,343	1,279	16	2,537	36	1	32	1,088	1,534	2,556	41	25	2,622	...	5	1	6	93·4	...	2,375

* Exclusive of Savanoor State.

† Do. do. and Jamkhundee.

1	2	3		4		5		6		7	8	9												10				11		12
												Primary Vaccine Operations.												Re-Vaccinations.				Percentage of Successful Cases, excluding those "unknown" from the Total.		
												A.		B.					C.				D.	A.	B.	C.	D.			
												Sex.		Caste.					Age.		Results.									
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1870-71.	1869-70.	Number of Vaccinators. 1870-71.	1869-70.	Total Number of Persons Vaccinated. 1870-71.	1869-70.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.		Population of Area included in last column.	Name of Talooka or Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccination.	In Re-Vaccination.	Average Number of Persons Vaccinated by each Vaccinator.
									Sq. Miles.																					
Western—*continued.*	H. J. Blanc, M.D., Assistant Surgeon.	...	...	6/12	9/12	1,288	2,685	Colaba.	334	58,264	Mangaum	677	602	...	1,159	40	...	80	392	887	1,262	17	...	1,279	9	...	...	9	93·6	100·	
		...	...	15/12	12/12	2,937	2,587		436	77,329	Mhar	1,506	1,410	...	2,587	16	...	313	354	2,562	2,909	7	...	2,916	19	2	...	21	99·7	90·4	
		...	...	11/12	...	1,469	...		243	51,801	Penn	780	660	...	1,291	14	...	135	547	893	1,322	86	32	1,440	26	3	...	29	93·9	89·6	
		...	...	11/12	...	1,750	...		171	32,360	Roha	891	841	...	1,666	30	...	36	573	1,159	1,604	53	75	1,732	18	...	...	18	96·8	100·	
		...	...	12/12	12/12	4,523	4,599	Rutnagherry.	800	104,674	Chiploon	2,271	2,142	...	3,382	357	...	644	425	3,985	4,356	57	...	4,413	86	24	...	110	98·7	78·1	
		...	...	15/12	12/12	3,531	3,217		1,206	105,318	Dapoolee	1,506	1,440	2	2,335	113	...	496	712	2,234	2,828	54	64	2,946	513	64	8	585	98·1	88·9	
		...	...	11/12	13/12	3,395	4,305		Unkn.	74,899	Deogur	1,815	1,512	...	3,006	82	...	239	448	2,879	3,179	75	73	3,327	39	4	25	68	97·6	90·7	
		...	...	9/12	12/12	1,551	2,223		Do.	50,874	Gohaghur	769	702	...	1,390	81	...	...	112	1,359	1,399	9	63	1,471	70	5	5	80	99·5	93·3	
		...	...	11/12	8/12	3,174	1,803		800	97,856	Malwan	1,592	1,539	63	2,946	7	...	115	503	2,628	3,099	32	...	3,131	43	...	...	43	98·9	100·	
		...	...	12/12	8/12	1,631	1,701		824	106,917	Rajapoor	1,829	1,763	...	3,157	136	...	299	612	2,980	3,370	138	84	3,592	50	34	5	89	96·	59·5	
		...	...	10/12	4/12	2,397	1,004		1,296	87,280	Rutnagherry	1,113	1,138	...	1,801	111	...	339	440	1,811	2,031	28	192	2,251	76	63	7	146	98·6	54·6	
		...	...	15/12	7/12	4,483	1,457		Unkn.	74,246	Sungmeshwar	2,288	2,105	...	3,672	126	...	595	747	3,646	4,261	63	69	4,393	62	27	1	90	98·5	69·6	
		...	...	3/12	14/12	399	2,148	Native State of Johar.	Do.	8,000	Johar	211	188	...	399	...	...	...	98	301	376	20	3	399	...	...	...	...	94·9	...	
		...	...	12/12	12/12	4,754	5,873	Native State of Sawunt Warree.	Do.	158,853	Sawunt Warree.	2,313	2,171	94	4,299	91	...	...	773	3,711	4,104	343	37	4,484	178	89	3	270	92·2	66·6	
Total.		...	...	25	20	59,372	45,093		Unkn.	1,694,868		29,643	27,602	551	51,553	1,541	25	3,575	12,878	44,367	53,697	1,754	1,794	57,245	1451	498	178	2,127	96·8	74·4	2,375

...	...	1	1	...	...	One Vaccinator in Superintendent's Office.																							
...	...	1	1	2,894	1,373	Ahmedabad Collectorate.	344	236,782	Duscroe	1,338	1,244	23	2,418	45	1	95	1,601	981	2,305	107	170	2,582	215	71	26	312	95·5	75·1
...	...	1	1	1,925	2,839		421	49,468	Sanund	888	875	...	1,558	93	...	112	1,280	483	1,602	100	61	1,763	104	40	18	162	94·1	72·2
...	...	2	2	4,559	4,841		653	110,462	Veerangaum .	2,192	1,918	...	3,654	155	...	301	3,003	1,104	3,661	211	238	4,110	134	217	98	449	94·5	63·6
...	...	1	2	3,291	4,121		672	102,488	Dholka	1,094	987	...	1,783	119	...	179	1,681	400	1,986	3	92	2,081	1048	4	158	1,210	99·8	99·6
...	...	2	2	4,410	4,144		1,081	122,161	Dhundhooka .	2,031	1,727	...	3,217	313	...	228	2,449	1,309	3,556	136	63	3,758	488	129	35	652	96·3	79·0
...	...	2	2	3,004	3,831		543	92,358	Prantaje	1,286	1,186	...	2,256	164	...	52	1,704	768	2,195	157	120	2,472	325	127	80	532	93·3	71·9
...	...	1	1	3,018	3040	Kaira Collectorate.	156	59,768	Memoodabad.	1,166	967	1	1,803	130	...	199	1,587	546	1,991	57	85	2,133	717	90	78	885	97·2	88·8
...	...	1	1	1,237			208	62,677	Matur.....	523	419	...	710	87	...	145	550	392	892	22	28	942	250	23	22	295	97·5	91·5
...	...	1	2	3,647	6,163		200	76,221	Neriad	1,788	1,421	...	2,591	342	...	276	2,331	878	2,967	107	135	3,209	303	86	49	438	96·5	77·8
...	...	1	1	3,187	2,218		270	71,714	Kuppudvunj .	1,568	1,375	...	2,532	287	...	124	2,228	715	2,986	101	156	2,943	181	14	49	244	96·3	92·8
...	...	1	1	2,019	2,034		178	55,922	Thasra	926	785	...	1,412	166	1	132	1,280	431	1,624	55	32	1,711	244	47	17	308	96·7	83·8
...	...	1	2	3,309	5,198		223	108,576	Anund	1,733	1,436	...	2,812	197	...	160	2,256	913	2,935	89	145	3,169	112	15	13	140	97·0	88·1
...	...	1	1	3,456	4,743		161	99,293	Borsud	1,663	1,448	10	2,747	105	...	249	2,587	524	2,910	137	64	3,111	259	52	34	345	95·5	83·2
...	...	1	1	2,395	2,447	Broach Collectorate.	298	64,511	Broach	1,223	1,059	1	1,398	593	...	285	1,888	394	2,071	51	160	2,282	87	18	8	113	97·5	82·8
...	...	1	1	2,520	2,158		375	74,951	Jumboosur ...	1,347	1,092	...	1,936	346	1	126	1,193	1,246	2,188	86	165	2,439	48	14	25	87	96·2	77·4
...	...	1	1	2,134	1,656		224	34,024	Ahmode.....	640	540	...	948	204	...	28	709	471	931	157	92	1,180	31	13	10	54	85·5	70·4
...	...						374	32,327	Wagra	443	428	...	753	103	...	12	431	440	765	60	46	871	21	3	5	29	92·7	87·5
...	...	1	1	1,499	1,854		406	71,873	Unklesur	684	683	...	1,001	269	12	85	1,028	339	1,182	139	46	1,367	70	49	13	132	89·4	58·8
...	...	1	1	1,639	1,153	Surat Collectorate.	336	70,531	Oolpar	829	728	3	1,409	78	15	52	467	1,099	1,346	103	108	1,557	49	27	6	82	92·8	64·4
...	...	1	1	1,401	1,700		94	28,144	Chowrasee ...	651	590	...	1,026	102	1	112	651	590	1,084	80	77	1,241	93	57	5	160	93·1	63·2
...	...	1	1	1,464	1,947		188	35,411	Mandvee	741	700	...	1,436	3	2	...	660	731	1,289	107	45	1,441	15	6	2	23	94·4	71·4
...	...	1	1	1,932	1,669		221	61,311	Bardolee	956	828	...	1,664	43	3	74	703	1,081	1,686	71	27	1,784	110	26	12	148	96·0	80·8
...	...	1	1	1,618	2,802		175	64,233	Soopa.....	811	709	...	1,322	88	2	108	810	710	1,342	103	75	1,520	54	21	23	98	92·8	72·0
...	...	1	1	1,975	2,522		167	49,103	Chicklee	925	834	...	1,494	159	1	105	811	948	1,716	21	22	1,759	152	55	9	216	93·7	73·4
...	...	2	1	2,027	1,663		225	71,972	Bulsar	959	970	...	1,722	80	3	124	672	1,257	1,609	136	184	1,929	70	21	7	98	92·2	76·9
...	...	1	...	1,833	1,721		103	41,604	Bugwara	674	634	...	1,230	7	1	70	797	511	1,223	42	43	1,308	336	108	81	525	96·6	75·6
...	...	1	1	791	1,936	.....	Unknown.		Deesa Cantonment or surrounding Villages.....	437	328	14	676	48	4	18	499	270	748	11	1	760	11	15	5	31	93·5	42·3
...	...	1	1	1,957	3,233	Pahlunpoor State.	6,041	304403	Pahlunpoor ...	1,012	921	...	1,579	199	1	163	651	1,282	1,857	27	49	1,933	24	...	...	24	98·5	100·0
...	...	1	1	1,153	268				Dhanera	604	505	...	1,018	43	...	48	393	716	899	139	71	1,109	29	13	3	44	86·5	70·7
...	...	1	1	960	2,149				Kakhrej.....	482	340	...	808	4	...	10	323	499	815	4	3	822	137	...	1	138	99·5	100·0
...	...			156					Deodur	96	60	...	156	...	...	...	24	132	156	...	...	156	...	...	...	...	100·0	...
...	...			...					Tehrwara	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	1	623	1,777				Wow	258	246	...	426	13	...	65	157	347	495	9	...	504	81	37	1	119	98·2	68·6
...	...			1,243					Thurrad	452	551	...	895	18	...	95	376	627	959	31	13	1,003	156	88	1	240	96·8	65·2
...	...			1,183					Santulpoor ...	518	441	...	808	77	...	74	39	920	939	6	14	959	171	22	31	224	99·3	88·0
...	...			164					Morevara	77	84	...	155	4	...	2	6	155	159	2	...	161	3	...	...	3	98·7	100·0
...	...			155					Warye	73	50	...	106	13	...	4	8	115	109	8	6	123	25	4	3	32	93·1	86·2
...	...	1	1		1,079				Charchut	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...								Jujham	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...								Bhabhur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...								Soeegaum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	1	916	1,057				Rhadunpoor...	504	412	...	748	145	...	23	294	622	733	33	150	916	...	...	...	...	95·6	...
...	...	1	1	1,222	2,627	Mahee Kanta.	4,000		27,157	Watruckkanta	546	529	...	998	53	...	24	603	472	905	92	78	1,075	119	15	13	147	90·7	88·8
...	...			1,304					27,743	Bavesee	649	597	2	1,128	19	...	97	725	521	1,150	68	28	1,246	30	15	4	58	94·4	72·2
...	...			554					17,887	Kuttosun	281	267	...	475	32	...	41	325	223	505	34	9	548	5	1	...	6	94·5	83·3
...	...			617					26,105	Rhevur	295	214	...	450	5	...	54	208	301	474	15	20	509	102	1	5	108	96·9	99·0
...	...	3	3	4,249	5,584				177667	NaneeMarwar	2,136	1,982	...	3,749	172	...	197	1,958	2,160	3,616	273	229	4,118	108	10	13	131	92·9	91·5
...	...	1	1	1,029	1,597				32,039	Sabur Kanta .	529	442	...	873	45	...	48	538	433	927	19	25	971	50	...	8	58	97·9	100·0

1,708

1	2	3		4		5		6		7	8	9												10				11		12
												Primary Vaccine Operations.												Re-Vaccinations.				Percentage of Successful Cases, excluding those "unknown" from the Total.		
												A.		B.					C.					D.	A.	B.	C.	D.			
												Sex.		Caste.					Age.		Results.										
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1870-71.	1869-70.	Number of Vaccinators. 1870-71.	1869-70.	Total Number of Persons Vaccinated. 1870-71.	1869-70.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during the year.	Sq. Miles.	Population of Area included in last column.	Name of Taluka or Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccination.	In Re-Vaccination.	Average Number of Persons Vaccinated by each Vaccinator.
NORTHERN—*continued.*	M. B. COLAH, M.D.	...	...	1	1	1,828	2,256	Cambay ...	...	79,019	Cambay.....	860	778	...	1,349	210	5	74	1,239	390	1,591	15	32	1,638	143	27	20	190	99·0	84·1	
		...	...	1	1	2,051	1,107	Dhurmpoor.	...	25,000	Dhurmpoor ...	1,151	900	...	2,031	7	...	13	382	1,669	1,911	80	60	2,051	...	...	...	...	95·9	...	
		...	...	1	...	89	...	Bansda	...	22,000	Bansda	45	44	...	87	2	...	...	10	79	79	3	7	89	...	...	...	...	96·3	...	
		...	...	2	2	5,429	4,047	Ahmedabad Collectorate.	...	119,368	Ahmedabad Town	1,829	1,698	11	2,600	736	18	162	2,211	1,316	3,358	115	54	3,527	1649	196	57	1,902	96·6	89·3	
		...	...	1	1	852	1,451		...	21,000	Dholka Town.	350	322	...	448	155	...	69	600	72	635	21	16	672	147	20	13	180	96·7	88·	
		...	...	1	1	1,146	1,376		...	19,000	Veerumgaum Town	576	446	...	892	121	...	9	714	308	997	6	19	1,022	28	85	11	124	99·4	24·7	
		...	...	1	...	419	...		...	10,000	Dhundooka ,,	234	184	...	253	127	...	38	353	65	380	28	10	418	1	...	...	1	93·1	100·	
		...	...	1	...	754	...	Kaira Col.	...	21,000	Neriad ,,	363	334	...	583	101	1	12	467	230	659	21	17	697	45	8	4	57	96·9	84·9	
		...	...	1	...	511	...	Broach do.	...	25,000	Broach ,,	250	260	...	245	235	30	...	210	300	416	11	83	510	1	...	...	1	97·4	100·	
		...	...	52	49	93,754	99,881	*	18,270	2,892,520	*	43,686	38,513	65	70,403	6,856	102	4,773	49,664	32,535	75,214	3,509	3,476	82,199	3595	1884	1076	11,555	95·5	82·	1,798
Assistant Surgeon.		...	...	...	...	3,103	2,018	Kurrachee Collectorate.	...	46,000	Dadoo.....	1,560	1,356	...	265	2,588	...	63	809	2,107	2,821	39	56	2,916	74	71	42	187	98·	51·	
		...	...	...	...	2,033	1,648		...	40,000	Sehwan	708	622	...	199	1,088	...	43	275	1,055	1,149	107	74	1,330	342	293	68	703	91·	53·	
		...	...	...	...	2,036	920		...	15,000	Manjhanda ...	818	671	...	195	1,250	...	44	404	1,085	1,460	12	17	1,489	310	106	132	548	99·	74·	
		...	...	...	...	1,065	1,353		...	16,000	Kotree	717	348	11	84	948	...	22	244	821	955	48	62	1,065	...	...	...	...	95·	...	
		...	...	...	...	966	999		...	26,000	Tatta	509	445	...	44	889	...	21	174	780	928	...	26	954	...	...	12	12	100·	...	
		...	...	...	...	304	1,585		...	10,000	Kurrachee ...	179	125	5	39	235	4	21	126	178	246	36	22	304	...	...	...	...	87·	...	
		...	...	...	...	355	324		...	14,000	Meerpoor Sacra	184	169	...	14	337	...	2	129	224	327	18	8	353	2	...	...	2	94·	100·	
		...	...	...	...	...	512		...	16,000	Ghorabari.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	1,780	150		...	21,000	Shahbunder...	759	660	...	164	1,200	...	64	195	1,233	1,362	35	31	1,428	227	90	35	352	97·	71·	
		...	...	...	...	1,329	26		...	13,000	Jattee.....	675	654	...	133	996	...	180	210	1,099	1,221	4	84	1,309	12	1	7	20	99·	92·	
		...	...	...	...	902	746		...	24,000	Meerpoor Buttora	450	369	...	69	663	...	87	100	719	774	29	16	819	26	27	30	83	96·	49·	
		...	...	...	...	1,384	2,211	lectorate.	...	56,000	Rohree	774	610	...	196	1,092	...	96	946	438	1,306	6	72	1,384	...	...	...	...	99·	...	
		...	...	...	...	44	1,341		...	10,000	Syudpoor	23	21	...	4	16	...	24	28	16	44	...	...	44	...	...	...	...	100·	...	
		...	...	...	...	1,999	889		...	34,000	Ghotekee	1,101	832	...	293	1,467	...	173	874	1,059	1,895	...	38	1,933	57	8	1	66	100·	87·	
		...	...	...	...	803	1,187		...	23,000	Meerpoor Matelo	475	346	...	44	635	...	124	203	600	801	1	1	803	...	...	...	...	99·	...	

* Exclusive of Deesa and environs.

SIND. J. WILLIAMS, M.D.,	...	...	...	...	1,920	1,606	Shikarpore Collectorate.	...	30,000	Oobaoro	1,136	859	...	160	1,632	...	203	801	1,194	1,952	12	31	1,995	12	1	2	15	99·	92·	2,555
	...	...	...	...	1,168	494		..	32,000	Shikarpoor	642	526	...	164	981	...	23	643	525	1,167	...	1	1,168	...	...	...	...	100·	...	
	...	...	...	...	1,631	1,210		...	30,000	Sukkur	895	703	...	374	1,151	...	70	888	707	1,587	...	8	1,595	13	16	7	36	100·	44·	
	...	...	...	...	2,380	2,375		...	35,000	NowsheroAbro	962	832	...	375	1,376	...	43	1,332	442	1,720	17	57	1,794	122	379	85	586	99·	24·	
	...	...	...	...	2,023	1,759		...	63,000	Larkhana	1,182	836	...	183	1,652	...	183	1,300	718	1,968	5	45	2,018	7	2	4	13	99·	77·	
	...	...	...	...	1,688	...		...	40,000	Ratadehra	967	687	...	270	1,328	...	56	583	1,071	1,627	10	19	1,654	14	10	10	34	99·	58·	
	...	...	...	...	2,658	2,396		...	40,000	Kumbur	1,361	1,277	...	361	2,187	...	90	1,133	1,505	2,610	21	7	2,638	10	8	2	20	99·	55·	
	...	...	...	...	907	...		...	20,000	Soojawul	494	402	...	51	833	...	12	434	462	895	...	1	896	5	3	3	11	100·	62·	
	...	...	...	...	1,191	668		...	28,000	Nusseerabad	654	537	...	103	1,072	...	16	411	780	1,173	16	2	1,191	...	...	...	...	98·	...	
	...	...	...	...	532	333		...	14,000	Labdarya	288	244	...	56	458	...	18	336	196	524	6	2	532	...	...	...	...	98·	...	
	...	...	...	...	115	1,915		...	15,000	Tiger	71	44	...	9	106	...	...	44	71	115	...	...	115	...	...	...	...	100·	...	
	...	...	...	...	2,031	675		...	30,000	Mehur	1,079	856	...	320	1,560	...	55	556	1,379	1,914	5	16	1,935	74	21	1	96	99·	77·	
	...	...	...	...	2,288	1,505		...	25,000	Kukkur	1,167	962	...	173	1,819	...	137	1,235	894	2,048	14	67	2,129	67	51	41	159	99·	56·	
	...	...	...	...	1,111	1,102	Hydrabad Collectorate.	...	80,000	Hydrabad	599	508	...	130	893	...	84	446	661	1,082	4	21	1,107	...	...	4	4	97·	...	
	...	...	...	...	1,454	...		...	40,000	Goonee	439	342	...	31	709	...	41	183	598	765	...	16	781	389	178	106	673	100·	68·	
	...	...	...	...	3,837	3,220		...	45,000	Tanda	1,201	1,054	...	161	1,991	...	103	530	1,725	2,225	6	24	2,255	783	593	205	1,581	99·	56·	
	...	...	...	...	1,814	1,214		...	35,000	Bage Tanda	937	877	...	187	1,274	...	353	425	1,389	1,646	43	125	1,814	...	...	...	...	97·	...	
	...	...	...	...	1,575	2,286		...	42,000	Buddeen	588	525	...	172	820	...	121	217	896	1,077	8	28	1,113	227	159	76	462	99·	58·	
	...	...	...	...	938	1,589		...	20,000	Digri	381	358	...	61	616	...	62	219	520	727	1	11	739	111	72	16	199	99·	60·	
	...	...	...	...	3,508	795		...	46,000	Allyar Tanda	1,694	1,304	...	456	2,084	...	458	632	2,366	2,968	17	13	2,998	224	206	80	510	99·	52·	
	...	...	...	...	2,760	2,656		...	40,000	Shahdadpoor	1,327	801	...	370	1,562	...	196	675	1,453	2,125	3	...	2,128	587	41	4	632	99·	93·	
	...	...	...	...	1,162	...		...	40,000	Halla	688	463	...	194	856	...	106	215	941	1,125	...	31	1,156	...	5	1	6	100·	...	
	...	...	...	...	353	2,733		...	40,000	Sukkrund	229	119	...	54	282	...	12	197	151	343	3	2	348	...	5	...	5	99·	...	
	...	...	...	...	2,280	332		...	42,000	Mora	1,213	1,057	...	420	1,716	...	134	669	1,601	2,246	13	11	2,270	9	1	...	10	99·	90·	
	...	...	...	...	1,926	1,741		...	50,000	Nowshera Feroza	1,080	846	...	215	1,572	...	139	951	975	1,814	70	42	1,926	...	...	...	...	96·	...	
	...	...	...	...	1,489	2,369		...	33,000	Khandiara	845	635	...	236	1,219	...	25	748	732	1,473	5	2	1,480	5	4	...	9	99·	55·	
	...	...	...	...	2,100	...		...	25,000	Meerpoor Khass	990	818	...	326	846	...	645	264	1,553	1,757	11	49	1,817	100	82	101	283	99·	54·	
	...	...	...	...	1,845	1,495	Frontier Upper Sind.	...	33,000	Jacobabad	983	807	...	93	1,672	...	20	892	898	1,778	3	9	1,790	39	15	9	63	99·	72·	
	...	...	...	...	633	683		...	25,000	Kusmore	345	269	...	1	606	...	7	260	354	609	1	4	614	9	8	2	19	99·	53·	
	...	...	...	...	2,136	2,147		...	27,000	Thoule	1,202	934	...	139	1,930	...	67	1,192	944	2,125	1	10	2,136	...	...	...	...	99·	...	
	...	...	...	...	499	1,362	Thurr and Parkur.	...	40,000	Oomerkote	264	212	...	27	249	...	200	88	388	470	...	6	476	13	8	2	23	100·	61·	
	...	...	...	...	1,260	3,277		...	21,000	Kippra	490	368	...	35	676	...	147	119	739	789	2	67	858	217	114	71	402	99·	65·	
	...	...	...	...	3,527	1,515		...	50,000	Nuggur Parkur	1,243	973	...	496	1,079	...	641	225	1,991	1,903	2	311	2,216	347	4	960	1,311	99·	98·	
	...	...	...	...	2,266	483		...	40,000	Dipla	1,268	923	...	458	1,248	...	485	73	2,113	2,116	...	75	2,191	28	33	2	63	100·	45·	
	...	...	...	...	1,864	...		...	30,000	Sanghur	699	609	...	80	1,122	...	106	226	1,082	1,293	1	14	1,308	282	173	101	556	99·	61·	
	...	...	...	...	1,052	...		...	25,000	Mittee	431	390	...	271	247	...	303	103	718	712	...	109	821	131	63	37	231	100·	67·	
	...	...	...	...	1,757	1,260	Kheirpoor State.	...	110,000	Kheirpoor	926	679	...	315	1,236	...	54	581	1,024	1,444	104	57	1,605	20	143	1	164	93·	12·	
Total.	2	2	32	32	81,887	63,204	.....		63,000	1,745,000		39,883	31,855	16	9,275	56,064	4	6,379	24,568	47,170	60,199	739	1,809	71,738	4895	2994	2260	10,149	98	62·	2,555
KATTIAWAR. Surgeon BUTLER;	...	...	1	1	1,821	1,918	Saiela	...	57,000	Saiela	919	893	...	1,656	80	...	76	411	1,401	1,755	26	31	1,812	6	3	...	9	98·5	66·6	
	...	...	...	...	...	...	Choora	...	.....	Choora	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Choteyla	...	.....	Choteyla	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1	1	1,062	1,759	Wankaneir.	...	46,000	Wankaneir	538	510	...	728	256	...	64	855	193	1,005	39	4	1,048	11	1	2	14	96·2	91·6	
	...	...	1	1	1,759	1,812	Vithulghur.	...	42,000	Vithulghur	841	811	...	1,516	39	...	97	823	829	1,594	25	33	1,652	42	37	28	107	98·4	55·6	
	...	...	...	...	...	...	Limre Byat.	...	.....	Wurode	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Moolee	...	.....	Moolee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Tulsana	...	.....	Tulsana	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1	1	867	992	Bugusra	...	27,000	Bugusra	450	417	...	801	64	...	2	72	795	738	48	51	867	...	...	...	...	92·7	...	
	...	...	...	...	...	...	Kurreana	...	.....	Kurreana	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Vasavur	...	.....	Vasawur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

1	2	3		4		5		6		7	8	9												10				11		12
												Primary Vaccine Operations.												Re-Vaccinations.				Percentage of Successful Cases, excluding those "unknown" from the Total.		
												A.		B.					C.					D.	A.	B.	C.	D.			
												Sex.		Caste.					Age.		Results.										
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1870-71.	1869-70.	Number of Vaccinators. 1870-71.	1869-70.	Total Number of Persons Vaccinated. 1870-71.	1869-70.	Collectorate, Political Agency, or Native State in which Vaccinations were performed during *the year*.		Population of Area included in last column.	Name of Taluka or Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccination.	In Re-Vaccination.	Average Number of Persons Vaccinated by each Vaccinator.
									Sq. Miles.																						
Kattiawar—*continued.*	Surgeons Shepherd and Blomfield.	...	...	1	1	984	1,123	Kotra Sangane.	...	33,000	Kotra Sangane	458	482	...	741	154	...	45	435	505	885	37	18	940	26	12	6	44	95·9	68·4	
		...	...	...	...	...	...	Kherusra	...	.....	Kherusra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	...	...	Lodeeka	...	.....	Lodeeka	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	...	...	Mengnee	...	.....	Mengnee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	1	1	1,365	933	Dhurolee	...	22,000	Dhurole	649	551	...	1,036	95	...	69	264	936	1,121	53	26	1,200	137	24	4	165	95·4	85·	
		...	...	1	1	1,129	1,503	Oond Surveya and Wankaneir.	...	19,000	Chock and Wankaneir	585	527	...	908	129	...	75	556	556	1,063	42	7	1,112	11	6	...	17	96·2	64·7	
		...	...	1	...	784	...	Dantha	...	10,000	Dantha	376	362	...	680	58	...	...	386	352	641	85	12	738	29	15	2	46	88·1	65·9	
		...	...	...	...	...	...	Hathusnee	...	.....	Hathusnee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		1	1	...	...	1,342	707	Joonaghur.	...	260,000	Joonaghur	728	588	...	701	597	...	18	399	917	1,239	41	16	1,316	1	18	7	26	96·8	5·2	
		...	...	1	1	1,581	1,209		...	.....	Kootiana	871	692	...	1,179	347	...	37	550	1,013	1,515	40	8	1,563	6	10	2	18	97·3	37·5	
		...	...	1	1	1,249	438		...	.....	Mangrole	628	534	...	945	217	...	...	193	969	1,162	...	...	1,162	87	...	...	87	100·	100·	
		...	...	1	1	475	730		...	.....	Oona	257	194	...	439	12	...	...	115	336	438	9	4	451	18	5	1	24	97·5	78·2	
		...	...	1	1	380	871		...	.....	Puttun	185	142	...	292	35	...	...	78	249	290	2	35	327	53	...	...	53	99·3	100·	
		...	...	1	1	1,133	1,069		...	.....	Mallea Chorwar	658	475	...	1,069	57	...	7	592	541	1,112	2	19	1,133	...	...	...	...	99·8	...	
		1	1	...	...	1,173	1,252	Bhownuggur.	...	200,000	Bhownuggur	604	536	...	963	177	...	...	407	733	1,075	47	18	1,140	28	4	1	33	95·8	87·5	
		...	...	1	1	956	985		...	.....	Mowah	497	457	...	877	77	...	...	294	660	950	3	1	954	2	...	...	2	99·6	100·	
		...	...	1	1	1,362	1,156		...	.....	Koondla	671	674	...	1,241	104	...	...	320	1,025	1,217	95	33	1,345	6	10	1	17	92·7	37·5	
		...	...	1	1	1,190	788		...	.....	Shehore	610	566	...	1,043	133	...	...	145	1,031	980	148	48	1,176	5	5	4	14	86·9	50·	
		...	...	1	1	1,598	1,682		...	.....	Botad	828	770	...	1,538	60	...	...	711	887	1,531	29	38	1,598	...	...	...	...	98·1	...	
		...	...	1	1	1,355	1,208		...	.....	Tullaja	682	640	...	1,230	92	...	...	446	876	1,000	157	165	1,322	11	7	15	33	85·7	61·1	
		...	...	1	1	960	1,063		...	.....	Nogunvudur	471	425	...	860	36	...	...	742	154	843	43	10	896	53	11	...	64	95·1	82·	
		...	...	1	1	1,181	438		...	.....	Oomrabla	616	565	...	1,084	37	...	...	358	763	941	118	62	1,121	55	3	2	60	88·8	94·8	
		...	...	1	1	747	1,164		...	.....	Leelea	404	333	...	711	26	...	...	169	568	607	86	44	737	9	...	1	10	87·5	100·	
		...	...	1	1	1,506	1,096		...	.....	Mowah	817	682	...	1,332	167	...	...	308	1,191	1,135	195	169	1,499	6	...	1	7	78·3	100·	
		...	...	1	1	651	720		...	.....	Low Caste Vaccinator	350	301	...	39	3	...	609	268	383	517	29	105	651	...	...	...	...	94·7	...	
		...	...	1	1	1,723	1,769	Nowanuggur.	...	160,000	Nowanugger	1,006	683	...	1,179	476	...	34	814	875	1,562	74	53	1,689	22	10	2	34	94·2	68·7	
		...	...	1	1	1,314	1,276		...	.....	Joorea	704	562	...	1,044	179	...	43	400	866	1,108	76	82	1,266	26	17	5	48	93·5	60·4	
		...	...	1	1	1,367	1,260		...	.....	Kundorua	741	622	...	1,193	170	...	...	366	997	1,246	61	56	1,363	2	2	...	4	95·3	50·	
		...	...	1	1	1,275	1,073		...	.....	Jodhpur	639	615	...	879	350	...	16	331	923	1,130	85	39	1,254	19	2	...	21	92·9	90·4	
		...	...	1	1	1,525	1,259	Goondul.	...	80,000	Goondul	776	655	...	1,128	196	...	107	846	585	1,334	67	30	1,431	71	13	10	94	93·2	84·	
		...	...	1	1	882	350		...	.....	Oopleta	447	433	...	718	124	...	38	331	569	772	99	9	880	1	1	...	2	88·6	50·	
		...	...	1	1	1,217	1,201		...	.....	Dhorajee	624	574	...	875	233	...	90	987	211	1,055	94	49	1,198	14	4	1	19	91·8	77·7	
		...	...	1	1	1,470	1,788	Morevee	...	60,000	Morevee	808	662	...	1,206	204	...	...	632	838	1,429	33	8	1,470	...	...	...	...	96·3	...	1,255

E. R. Butler, M.D., Surgeon; Acting	...	...	1	1	1,521	1,823	Limree	...	60,000	Limree	607	667	...	1,118	182	...	64	836	528	1,308	24	32	1,364	98	50	9	157	98·2	67·1	
	...	...	1	1	1,611	1,335	Jailpoor.....	...	77,560	Jailpoor.....	698	535	...	888	342	...	3	642	591	1,103	104	26	1,233	329	38	11	378	91·3	89·6	
	...	...	1	1	1,569	1,518	Wulla.....	...	16,000	Wulla.....	824	715	...	1,400	66	...	73	142	1,397	1,525	14	...	1,539	25	5	...	30	99·3	83·3	
	...	...	1	1	1,249	835	Dussara.....	...	38,100	Dussara.....	658	591	...	1,148	97	...	4	412	837	1,207	28	14	1,249	...	...	...	...	97·8	...	
	...	...	...	...	...	...	Bujjana	...	.....	Bujjana	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Jeenjoowara .	...	.....	Jeenjoowara .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Wunode.....	...	.....	Wunode.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1	1	1,526	1,305	Drangdra....	...	34,000	Drangdra	799	705	...	1,350	74	...	80	726	778	1,421	69	14	1,504	21	1	...	22	98·	95·4	
	...	...	1	...	443	...	Do.	...	26,000	Hulwud	242	201	...	399	13	...	31	236	207	381	48	14	443	...	...	...	...	88·8	...	
	...	...	1	1	1,429	1,358	Luktur	...	28,000	Luktur	724	621	...	1,231	30	...	74	405	130	1,278	32	25	1,335	48	39	7	94	97·5	57·1	
	...	...	...	...	...	...	Wudwan Byat	...	.....	Wudwan Byat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1	1	1,413	1,305	Bantwa	...	48,400	Bantwa	673	568	...	838	271	...	132	736	505	1,222	10	9	1,241	159	7	6	172	99·2	95·8	
	...	...	1	1	852	1,195	Wudwan ...	...	48,000	Wudwan	437	415	...	791	19	...	42	426	426	782	45	25	852	...	...	...	...	94·5	...	
	...	...	1	1	1,277	1,005	Deedan	...	11,200	Deedan	659	549	...	1,024	178	...	6	322	886	1,182	7	19	1,208	52	3	14	69	99·4	94·5	
	...	...	...	...	...	...	Jafferabad .	...	.....	Jafferabad ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Joonaghur .	...	.....	Nogshree	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1	1	1,517	1,574	Rajcote	...	26,000	Surdhar.....	798	664	...	1,172	169	...	131	671	791	1,357	26	79	1,462	45	7	3	55	98·1	86·5	
	...	...	1	1	1,365	1,410	Jhusdun ...	...	43,208	Jhusdun	671	659	...	1,175	74	...	81	944	386	1,301	4	25	1,330	30	1	4	35	99·6	96·7	
	...	...	...	...	...	...	Kotra	...	.....	Kotra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	Babra.....	...	.....	Babra.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	1	1	1,168	1,231	Pallytana ...	...	50,000	Pallytana	606	492	...	1,065	28	...	5	346	752	1,098	...	...	1,098	31	39	...	70	100·	44·2	
	...	...	1	1	1,061	1,351	Porebunder.	...	60,000	Porebunder...	525	474	...	907	71	...	21	23	976	933	59	7	999	62	...	...	62	93·3	100·	
	...	...	1	1	382	230	Mallea	...	12,000	Mallea	192	181	...	326	45	...	2	117	256	255	75	43	373	4	3	2	9	77·2	57·1	
	...	...	...	...	...	912	Omitted in January 1870.																							
Total.	2	2	46	44	57,766	54,979			28,000	1,592,468		29,631	25,910	...	46,723	6,642	...	2,176	21,568	33,973	51,393	2,533	1,615	55,541	1661	413	151	2,225	93·6	80·	1,255
Rewa Kanta. Assistant Surgeon T. Cody.	...	...	1	1	1,733	2,370	Punch Mahals.		625	51,427	Godra.....	850	866	...	1,494	156	1	65	690	1,026	1,650	58	8	1,716	13	4	...	17	96·6	76·4	
	...	...	1	1	1,318	2,361			325	42,673	Dhohud	592	524	1	983	85	...	47	507	609	964	116	36	1,116	62	121	19	202	89·2	33·8	
	...	...	1	1	1,342	1,721			150	29,000	Kalole	661	581	...	1,138	39	...	65	839	403	1,096	99	47	1,242	60	14	26	100	91·7	81·	
	...	...	1	1	1,201	1,350			200	22,527	Jhalode	564	564	...	1,099	17	...	12	287	841	943	102	83	1,128	21	30	22	73	90·2	41·1	
	...	...	1	1	902	1,674			375	23,111	Halole	398	402	...	554	3	...	243	338	462	796	...	4	800	87	11	4	102	100·	88·7	
	...	...	2	2	3,040	2,073	Rewa Kanta Native States.		1,736	.....	Loonawara ...	1,507	1,533	...	2,722	162	...	156	663	2,377	2,902	101	37	3,040	...	...	...	...	96·6	...	
	...	...	2	2	4,508	3,068			4,500	.....	Rajpeepla	1,229	1,251	...	2,424	56	...	...	904	1,576	2,420	34	26	2,480	22	5	1	28	98·6	81·4	
	...	...	2	2	4,010	2,098			1,600	.....	Barrea	1,936	2,065	...	3,456	30	...	515	487	3,514	3,640	184	177	4,001	6	2	1	9	95·1	75·	
	...	...	1	1	1,110	434			400	.....	Ballasinore ...	528	522	...	921	89	...	40	308	742	935	74	41	1,050	33	20	7	60	92·6	62·2	
	...	...	1	1	651	706			3,000	.....	Chota Oodeypoor	300	324	...	591	...	...	42	181	452	482	110	41	633	17	1	...	18	81·4	94·4	
	...	...	1	1	582	1,136			900	.....	Soonth and Kuddana ...	281	282	...	548	15	...	...	44	519	419	33	111	563	4	14	1	19	92·6	22·2	
	...	...	1	1	757	651			400	.....	Sunkeira Mewas.....	382	365	...	729	18	...	...	201	546	653	46	48	747	8	2	...	10	93·4	80·	
Total.	...	...	15	15	19,154	19,642			14,211	70,000	(Estimate).	9,237	9,279	1	16,659	670	1	1,185	5,449	13,067	16,900	957	659	18,516	333	224	81	638	94·6	59·7	1,277
Presidency. Anunta Chandroba, Sub-Assist. Surgeon.	...	...	11	6	11,746	9,222	Bombay Island.		19	816,562	Bombay	6,729	4,771	853	7,962	1,822	703	160	3,833	7,667	8,358	1,284	1,858	11,500	152	77	17	246	86·6	66·3	1,068

1	2	3		4		5		6		7	8	9													10				11		12
												Primary Vaccine Operations.													Re-Vaccinations.				Percentage of Successful Cases, excluding those "unknown" from the Total.		
												A.		B.					C					D.	A.	B.	C.	D.			
												Sex.		Caste.					Age.		Results.										
Circle.	Name and Rank of Superintendent.	Number of Native Superintendents. 1870-71.	1869-70.	Number of Vaccinators. 1870-71.	1869-70.	Total Number of Persons Vaccinated. 1870-71.	1869-70.	Collectorate, Political Agency, or Native States in which Vaccinations were performed during the year.		Population of Area included in last column.	Name of Talooka or Town.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccination.	In Re-Vaccination.	Average Number of Persons Vaccinated by each Vaccinator.
Kutch.	Dorabjee Hormusjee, G.G.M.C.	1	...	3	3	648	610	Native State of Kutch	Sq. Miles. Unkn.	400,000	Bhooj, Mandavee, Moondra, Anjar &c.	363	285	...	393	255	...	...	160	488	571	49	28	648	...	...	...	...	92·1	...	216
Baroda Territory.	J. S. Remington, Surgeon Major.	1	1	23	23	23,659	22,383	Baroda District.	Unknown.		Baroda Districts	13,203	10,456	...	21,165	1,984	...	510	*	*	21,774	999	886	23,659	...	...	...	...	95·6	...	1028·6
Grand Total..		6	5	326	298	491,605	447,767					245,739	216,724	1,951	349,135	83,798	841	26,738	157,671	281,133	423,580	16,944	16,939	462,463	18,478	6,738	3,926	29,142	96·2	73·2	150·8

* The Ages in the Baroda Circle not having been given, the total of above and under one year does not agree with the total of Primary Vaccinations.

A.—VACCINE DEPARTMENT.

*CIVIL.

STATEMENT No. II., showing the Monthly Number and Results of the Vaccinations performed in each Circle of Superintendence in the Bombay Presidency for the Year 1870-71.

1	2	3	4	5			6	7
Circle of Superintendence.	Months.	District in which operations chiefly conducted in each Month.	Total Number Vaccinated.	Results.			Total.	Average percentage Successful, excluding those unknown.
				Successful	Unsuccessful and Doubtful.	Unknown.		
Central Circle.	April 1870....	Whole Circle....	6,302	5,752	242	308	6,023	96·
	May ,, ...	Do.	7,380	6,843	283	254	7,380	96·
	June ,, ...	Do.	7,233	6,658	262	313	7,233	95·
	July ,, ...	Do.	6,505	5,930	264	311	6,505	95·
	August ,, ...	Do.	6,447	5,833	283	331	6,447	95·
	September ,, ...	Do.	6,091	5,499	320	272	6,091	94·
	October ,, ...	Do.	6,705	6,094	271	340	6,705	95·
	November ,, ...	Do.	7,278	6,581	293	404	7,278	95·
	December ,, ...	Do.	8,369	7,713	282	374	8,369	96·
	January 1871....	Do.	7,947	7,293	271	383	7,947	96·
	February ,, ...	Do.	7,838	7,278	279	281	7,838	96·
	March ,, ...	Do.	9,028	8,387	317	324	9,028	96·
		Total....	87,123	79,861	3,367	3,895	87,123	96·
Southern Circle.	April 1870....	Whole Circle....	5,601	5,284	251	66	5,601	94·
	May ,, ...	Do.	5,493	5,252	227	14	5,493	95·
	June ,, ...	Do.	5,886	5,577	264	45	5,886	95·
	July ,, ...	Do.	5,012	4,703	106	203	5,012	97·
	August ,, ...	Do.	4,711	4,373	217	121	4,711	95·
	September ,, ...	Do.	4,515	4,231	178	106	4,515	95·
	October ,, ...	Do.	4,422	4,116	286	20	4,422	93·
	November ,, ...	Do.	4,201	3,917	196	88	4,201	95·
	December ,, ...	Do.	4,629	4,279	315	35	4,629	93·
	January 1871....	Do.	4,527	4,271	162	94	4,527	96·
	February ,, ...	Do.	5,243	4,776	295	172	5,243	94·
	March ,, ...	Do.	4,988	4,532	236	220	4,988	95·
			59,228*	55,311	2,733	1,184	59,228	
	Deduct Dispensary Vaccination.		2,732	2,307	332	93	2,732	
		Total....	56,496	53,004	2,401	1,091	56,496	95·

* This includes Dispensary Vaccinations, which should not be brought into an A form, and are now deducted.

1	2	3	4	5			6	7
Circle of Superintendence.	Months.	District in which operations chiefly conducted in each Month.	Total Number Vaccinated.	Results. Successful.	Unsuccessful and Doubtful.	Unknown.	Total.	Average percentage Successful, excluding those unknown.
Western Circle.	April 1870....	Whole Circle....	4,233	4,065	99	69	4,233	97·6
	May ,, ...	Do.	4,722	4,302 *151	85 * 58	114 * 12	4,501 * 221	98· *71·3
	June ,, ...	Do.	5,605	5,067 *178	155 * 80	106 * 19	5,328 * 277	97· *68·9
	July ,, ...	Do.	4,809	4,209 *149	203 * 50	141 * 57	4,553 * 256	95 4 * 74·8
	August ,, ...	Do.	5,041	4,287 *251	197 * 117	136 * 53	4,620 * 421	95·6 * 68·2
	September ,, ...	Do.	4,853	4,293 *192	170 * 67	120 * 11	4,583 * 270	96·1 * 74·5
	October ,, ...	Do.	5,274	4,724 *112	199 * 54	179 * 6	5,102 * 172	95·9 *67·4
	November ,, ...	Do.	4,880	4,336 * 93	162 * 7	267 * 15	4,765 * 115	96·4 * 93·
	December ,, ...	Do.	5,062	4,639 *114	87 * 14	205 * 3	4,931 * 131	98·1 * 89·
	January 1871....	Do.	5,043	4,601 * 111	217 * 10	102 * 2	4,920 * 123	95·4 * 91·7
	February ,, ...	Do.	5,341	4,823 * 70	109 * 36	300 * 3	5,232 * 109	93·9 * 66·
	March ,, ...	Do.	4,509	4,351 * 30	71 * 2	55	4,477 * 32	98·4 * 93·7
		Total....	59,372	53,697 * 1,451	1,754 * 498	1,794 * 178	57,245 * 2,127	96·8 * 74·4
				55,148	2,252	1,972	59,372	96·
Northern Circle.	April 1870	Whole Circle....	9,625	8,684	563	378	9,625	94·
	May ,, ...	Do.	10,059	8,836	710	513	10,059	92·
	June ,, ...	Do.	9,196	8,179	604	413	9,196	93·
	July ,, ...	Do.	7,760	6,761	588	411	7,760	92·
	August ,, ...	Do.	6,354	5,549	518	287	6,354	91·
	September ,, ...	Do.	7,121	6,270	532	319	7,121	92·
	October ,, ...	Do.	6,547	5,752	458	337	6,547	93·
	November ,, ...	Do.	8,743	7,825	511	407	8,743	94·
	December ,, ...	Do.	8,347	7,595	371	381	8,347	95·
	January 1871 ..	Do.	8,449	7,584	312	553	8,449	96·
	February ,, ..	Do.	7,913	7,139	321	453	7,913	96·
	March ,, ..	Do.	8,093	7,323	302	468	8,093	96·
			98,207†	87,497	5,790	4,920	98,207	94·
	Deduct Dispensary Vaccinations..		4,453	3,683	407	363	4,453	....
		Total....	93,754	83,814	5,383	4,557	93,754	94·

* Indicates "Re-vaccinations."

† This includes Dispensary Vaccinations, which should not be brought into an **A** form, and are now deducted.

1	2	3	4	5			6	7
Circle of Superintendence.	Months.	District in which operations chiefly conducted in each Month.	Total Number Vaccinated.	Results.			Total.	Average percentage Successful, excluding those unknown.
				Successful	Unsuccessful and Doubtful.	Unknown.		
Sind Circle.	April 1870....	Whole Circle....	6,316	5,475	518	323	6,316	
	May ,, ...	Do.	6,357	5,501	560	296	6,357	
	June ,, ...	Do.	5,615	4,949	442	224	5,615	
	July ,, ...	Do.	5,685	5,098	288	299	5,685	
	August ,, ...	Do.	6,055	5,303	370	382	6,055	
	September ,, ...	Do.	6,238	5,610	268	360	6,238	
	October ,, ...	Do.	6,520	5,748	259	513	6,520	
	November ,, ...	Do.	8,317	7,642	309	366	8,317	
	December ,, ...	Do.	7,311	6,853	210	248	7,311	
	January 1871....	Do.	7,524	7,021	146	357	7,524	
	February ,, ...	Do.	7,909	7,469	168	272	7,909	
	March ,, ...	Do.	6,975	6,470	147	358	6,975	
			80,822	73,139	3,685	3,998	80,822	
	Add Kotree Municipal Vaccinator's work for year *		1,065	955	48	62	1,065	
		Total....	81,887	74,094	3,733	4,060	81,887	98·
Kattiawar Circle.	April 1870....	Whole Circle....	5,051	4,589	239	223	5,051	95·
	May ,, ...	Do.	4,818	4,380	267	171	4,818	94·2
	June ,, ...	Do.	3,998	3,594	267	137	3,998	93·3
	July ,, ...	Do.	4,275	3,910	253	112	4,275	93·7
	August ,, ...	Do.	4,244	3,781	318	145	4,244	92·5 *
	September ,, ...	Do.	4,710	4,304	251	155	4,710	94·4
	October ,, ...	Do.	5,309	4,809	335	165	5,309	93·4
	November ,, ...	Do.	5,422	5,087	216	119	5,422	95·9
	December ,, ...	Do.	5,142	4,763	237	142	5,142	95·2
	January 1871....	Do.	4,974	4,683	163	128	4,974	96·6
	February ,, ...	Do.	4,708	4,330	222	156	4,708	95·5
	March ,, ...	Do.	5,115	4,824	178	113	5,115	96·4
		Total....	57,766	53,054	2,946	1,766	57,766	94·7
Rewa Kanta Circle.	April 1870....	Whole Circle....	2,278	2,070	140	68	2,278	96·
	May ,, ...	Do.	1,611	1,463	75	73	1,611	95·
	June ,, ...	Do.	1,979	1,800	109	70	1,979	94·
	July ,, ...	Do.	1,777	1,586	135	56	1,777	94·
	August ,, ...	Do.	1,656	1,459	135	62	1,656	93·
	September ,, ...	Do.	1,644	1,445	123	76	1,644	92·
	October ,, ...	Do.	1,254	1,087	110	57	1,254	92·
	November ,, ...	Do.	1,192	1,057	80	55	1,192	93·
	December ,, ...	Do.	1,247	1,132	71	44	1,247	94·
	January 1871....	Do.	1,328	1,233	48	47	1,328	96·
	February ,, ...	Do.	1,520	1,365	95	69	1,520	93·
	March ,, ...	Do.	1,668	1,536	60	72	1,668	96·
		Total....	19,154	17,233	1,181	740	19,154	94·

* This should have been shown monthly.

1	2	3	4	5			6	7
Circle of Superintendence.	Months.	District in which operations chiefly conducted in each Month.	Total Number Vaccinated.	Results.			Total.	Average percentage Successful, excluding those unknown.
				Successful	Unsuccessful and Doubtful.	Unknown.		
Presidency Circle.	April 1870....	Island of Bombay.	812	586	88	138	812	87·
	May ,, ...		1,136	805	129	202	1,136	86·
	June ,, ...		740	510	69	161	740	88·
	July ,, ...		586	404	74	108	586	84·
	August ,, ...		737	486	91	160	737	84·
	September ,, ...		928	613	100	215	928	86·
	October ,, ...		1,157	784	121	252	1,157	86·
	November ,, ...		1,070	725	189	156	1,070	79·
	December ,, ...		1,034	720	175	139	1,034	80·
	January 1871....		898	679	123	96	898	84·
	February ,, ...		1,363	1,132	105	126	1,363	91·
	March ,, ...		1,285	1,006	97	182	1,285	91·
		Total....	11,746	8,510	1,361	1,875	11,746	86·
Kutch Circle.	April 1870....	Bhooj, Mandavee, Moondra, Anjar, and other towns and villages.	40	34	6	....	40	85
	May ,, ...		61	58	2	1	61	96·
	June ,, ...		66	53	6	7	66	98·
	July ,, ...		62	56	1	5	62	98·
	August ,, ...		41	33	2	6	41	94·
	September ,, ...		33	33	....	....	33	100·
	October ,, ...		37	34	3	....	37	92·
	November ,, ...		51	46	3	2	51	94·
	December ,, ...		86	78	8	....	86	90·
	January 1871....		49	42	1	6	49	93·
	February ,, ...		43	41	1	1	43	97·
	March ,, ...		79	63	16	....	79	79·
		Total....	648	571	49	28	648	92·
Baroda Circle.	January 1870....	Baroda Districts.	1,880	1,751	71	58	1,880	96·1
	February ,, ...		2,060	1,893	84	83	2,060	95·7
	March ,, ...		2,301	2,127	105	69	2,301	95·2
	April ,, ...		2,315	2,142	76	97	2,315	96·5
	May ,, ...		2,160	2,010	89	61	2,160	95·7
	June ,, ...		2,049	1,877	81	91	2,049	95·8
	July ,, ...		1,749	1,543	87	119	1,749	94·6
	August ,, ...		1,437	1,319	74	44	1,437	94·6
	September ,, ..		1,745	1,589	89	67	1,745	94·6
	October ,, ...		1,678	1,553	78	47	1,678	95·2
	November ,, ...		1,848	1,682	80	86	1,848	95·4
	December ,, ...		2,437	2,288	85	64	2,437	96·4
		Total....	23,659	21,774	999	886	23,659	95·6
		Grand Total..	491,605	447,063	23,672	20,870	491,605	94·0

A.—VACCINE DEPARTMENT.

CIVIL.

STATEMENT No. III., showing Expenditure of Vaccine Department in each Circle of Superintendence in the Bombay Presidency for the year 1870-71.

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.
A.—Paid by Government.	Rs. a. p.	Rs. a. p.			Rs. a. p.
Superintendent General.					
Salary at Rs. 1,150* per mensem ..	13,800 0 0	13,800 0 0			
Office establishment at Rs. 104 do. ..	1,248 0 0	1,248 0 0			
Travelling expenses	2,400 0 0	2,430 0 0			
Contingencies	1,320 0 0	1,633 0 0			
Total....	18,768 0 0	19,111 0 0			
Central Circle.					
Superintendent's salary at Rs. 368-5, and Rs. 600 per mensem	7,200 0 0	5,346 0 0			
Native Supdts., at Rs. each do. ..	.....	.....			
1 Head Vaccinator at Rs. 30 do. ..	360 0 0	360 0 0			
2 Vaccinators at Rs. 24 each, do. ..	576 0 0	575 0 0			
18 Assistant Vaccinators at Rs. 18 do.	3,888 0 0	3,859 0 0			
8 Apprentice do. at Rs. 14 do.	1,344 0 0	1,318 0 0			
29 Vaccinators' Peons at Rs. 7 do. ..	2,436 0 0	2,429 0 0			
Office establishment at Rs. 30 do. ..	360 0 0	360 0 0			
Travelling allowances	2,424 0 0	1,875 0 0			
Contingencies	768 0 0	537 0 0			
Total..	19,356 0 0	16,659 0 0	54,367	96·	0 5 3
Southern Circle.					
Supdt.'s salary at Rs. 450 per mensem ..	5,400 0 0	5,400 0 0			
Native Supdts., at Rs. each, do. ..	.....	.....			
1 Head Vaccinator at Rs. 30 do. ..	360 0 0	360 0 0			
2 Vaccinators at Rs. 24 each, do. ..	576 0 0	571 0 0			
12 Asst. do. at Rs. 18 do. do. ..	2,592 0 0	2,528 0 0			
7 Apprentice do. at Rs. 14 do. do.	1,176 0 0	1,161 0 0			
22 Vacers.' Peons at Rs. 7 do. do. ..	1,848 0 0	1,697 0 0			
Office establishment at Rs. 30 do. ..	360 0 0	352 0 0			
Travelling allowances	1,944 0 0	2,355 0 0			
Contingencies	683 0 0	507 0 0			
Total....	14,939 0 0	14,931 0 0	26,306	95·	0 9 4
Western Circle.					
Supdt.'s salary at { Rs. 600 / ,, 800 } per mens.	5,400 0 0	7,335 0 0			
Native Supdts., at Rs. each, do. ..	.....	.....			
1 Head Vaccinator at Rs. 30 do. ..	360 0 0	352 0 0			
2 Vaccinators at Rs. 24 each, do. ..	576 0 0	553 0 0			
8 Asst. do. at Rs. 18 do. do. ..	1,728 0 0	1,628 0 0	36,984 † 1,178	97·8 † 79·3	
4 Apprentice do. at Rs. 14 do. do. ..	672 0 0	670 0 0			
15 Vaccinators' peons at Rs. 7 do. ..	1,260 0 0	1,209 0 0			
Office establishment at Rs. 30 do. ..	360 0 0	360 0 0			
Travelling allowances at Rs. 8 per diem	2,440 0 0	3,267 0 0			
Contingencies	713 0 0	549 0 0			
Total....	13,509 0 0	15,923 0 0	38,162	97·	0 7 0

* This includes Rs. 100 for Presidency house-rent. † Indicates Re-vaccinations.

1	2	3	4	5	6
	Sanctioned.	Expended.	Total. Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of of each successful case.
A.—Paid by Government—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Northern Circle.					
Supt.'s salary, at Rs. 450 per mensem.	5,400 0 0	4,200 0 0			
Native Supts., at Rs. each do. ..	....	....			
1 Head Vaccinator, at Rs. 30 do. ..	360 0 0	360 0 0			
2 Vaccinators, at Rs. 24 each do. ..	576 0 0	576 0 0			
19 Asst. Vaccinators, at Rs. 18 do. do. ..	4,104 0 0	4,048 0 0			
10 Apprentice do., at Rs. 14 do. do. ..	1,680 0 0	1,458 0 0			
3 Station do., at Rs. 13 do. do. ..	....	468 0 0			
32 Vaccinators' Peons, at Rs. 7 do. do...	2,688 0 0	2,529 0 0			
3 Station Vacrs.' Peons, at Rs. 7 & 8 do.	....	211 0 0			
Office establishment, at Rs. 30 do ..	360 0 0	278 0 0			
Travelling allowances	2,920 0 0	2,689 0 0			
Contingencies	585 0 0	697 0 0			
Total....	18,673 0 0	17,514 0 0	63,190	95·	0 4 9
Sind Circle.					
Supt.'s salary, at Rs. 600 per mensem.	7,200 0 0	6,845 0 0			
Native Supts., at Rs. each do. ..	....	....			
1 Head Vaccinator, at Rs. 30 do. ..	360 0 0	360 0 0			
2 Vaccinators, at Rs. 24 each do. ..	576 0 0	576 0 0			
9 Asst. Vaccinators, at Rs. 18 do. do. ..	1,944 0 0	1,944 0 0			
5 Apprentice do. at Rs. 14 do. do. ..	840 0 0	840 0 0			
17 Vaccinators' Peons, at Rs. 7 do. do...	1,428 0 0	1,428 0 0			
Office establishment, at Rs. 30 do. do...	360 0 0	360 0 0			
Travelling allowances*	4,175 0 0	4,312 0 0			
Contingencies	911 0 0	588 0 0			
Total....	17,794 0 0	17,253 0 0	48,599	95·	0 6 9
Kattiawar Circle.					
Supt.'s salary, at Rs. 100 per mensem .	1,200 0 0	1,200 0 0			
Native Supts., at Rs. each do. ..	....	....			
Head Vaccinator, at Rs. do. do ..	....	....			
1 Vaccinator, at Rs. 24 do. ..	288 0 0	288 0 0			
5 Asst. do., at Rs. 18 do. do. ..	1,080 0 0	1,017 0 0			
2 Apprentice do., at Rs. 14 do. do. ..	336 0 0	336 0 0			
1 Station Vacr., at Rs. 13 do. ..	156 0 0	156 0 0			
Vaccinators' Peons, at Rs. do. ..	....	....			
Office establishments, at Rs. 12 do. ..	144 0 0	128 0 0			
Travelling allowances	1,920 0 0	1,896 0 0			
Contingencies	336 0 0	412 0 0			
Total....	5,460 0 0	5,433 0 0	9,771	95·	0 8 10
Rewa Kanta Circle					
Supt.'s salary, at Rs. 450 per mensem. .	....	2,940 0 0			
Native Supts, at Rs. each do. ..	....	....			
Head Vaccinator, at Rs. do. ..	....	....			
1 Vaccinator, at Rs. 24 do. ..	288 0 0	288 0 0			
2 Asst. do., at Rs. 18 each do. ..	432 0 0	423 0 0			
2 Apprentice do., at Rs. 14 do. do. ..	336 0 0	330 0 0			
5 Vaccinators' Peons, at Rs. 7 do. do. ..	420 0 0	420 0 0			
Office establishment, at Rs. 12 do. do. ..	144 0 0	144 0 0			
Travelling allowances	600 0 0	776 0 0			
Contingencies	91 0 0	89 0 0			
Total....	2,311 0 0	5,410 0 0	6,496	93·	0 11 5

* This includes travelling allowance of 3 annas per diem to Vaccinators on duty in the Districts.

	1	2	3	4	5	6
		Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.
	A.—Paid by Government—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Presidency Circle.*	Supt.'s salary, at Rs. 350 per mensem..	4,200 0 0	4,200 0 0			
	Native Supts., at Rs. each do. ..	....	....			
	1 Head Vaccinator, at Rs. 30 do. ..	360 0 0	240 0 0			
	2 Vaccinators, at Rs. 24 each do. ..	576 0 0	384 0 0			
	2 Asst. do. at Rs. 18 do. do. ..	432 0 0	288 0 0			
	1 Apprentice do., at Rs. 14 do. ..	168 0 0	112 0 0			
	Vaccinators' Peons, at Rs. do. ..	....	....			
	Office establishment, at Rs. 33 do. ..	396 0 0	264 0 0			
	Conveyance allowance	540 0 0	480 0 0			
	Contingencies.....	119 0 0	108 0 0			
	Total....	6,791 0 0	6,076 0 0	7,166	86·	0 15 8
	Total paid by Government....	1,17,601 0 0	1,18,310 0 0	254,057	95·	0 8 1
	B.—Paid by Municipalities.					
Central Circle.	1 Vaccinator at Ahmednuggur, at Rs. 10 per mensem.	120 0 0	120 0 0	837	89·6	0 4 1
	1 Vaccinator's Peon do., at Rs. 6 do. ..	72 0 0	72 0 0			
	Do. Contingencies	....	....			
	2 Do. at Poona, at Rs. 18½ each do.	444 0 0	444 0 0	1,588	94·1	0 7 3
	2 Do. Peons do., at Rs. 6 each do.	144 0 0	144 0 0			
	Do. Contingencies	....	....			
	1 Do. at Nassick, at Rs. 15 do.	180 0 0	180 0 0	480	83·	0 13 3
	1 Do. Peon, do., at Rs. 6 do.	72 0 0	72 0 0			
	Do. Contingencies	....	....			
	1 Do. at Sholapoor, at Rs. 15 do.	180 0 0	180 0 0	1,057	94·8	0 4 5
	1 Do. Peon do., at Rs. 7 do.	84 0 0	84 0 0			
	Do. Contingencies	....	....			
	Do. at Barsee, at Rs. 15 do.	180 0 0	180 0 0	537	88·4	0 13 2
	1 Do. Peon do., at Rs. 6 do.	72 0 0	72 0 0			
	Do. Contingencies at As. 8 do.	6 0 0	6 0 0			
	1 Do. at Sangola, at Rs. 15 do.	180 0 0	180 0 0	937	95·4	0 5 8
	1 Do. Peon do., at Rs. 6 do.	72 0 0	72 0 0			
	Do. Contingencies, at Rs. 1 do.	12 0 0	12 0 0			
	1 Do. at Pundurpoor, at Rs. 15 do.	180 0 0	180 0 0	796	91·6	0 6 0
	1 Do. Peon do., at Rs. 6 do.	72 0 0	72 0 0			
	Do. Contingencies	....	....			
	1 Do. at Barramuttee, at Rs. 12 do.	144 0 0	144 0 0	834	99·7	0 4 5
	1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
	Do. Contingencies, at Rs. 1 do.	12 0 0	12 0 0			
	1 Do. at Khatow, at Rs. 15 do.	180 0 0	180 0 0	730	94·2	0 6 3
	1 Do. Peon do., at Rs. 6 do.	72 0 0	72 0 0			
	Do. Contingencies, at Rs. 1½ do.	18 0 0	18 0 0			
	1 Do. at Malseerus, at Rs. 15 do.	180 0 0	180 0 0	984	88·4	0 5 5
	1 Do. Peon do., at Rs. 6 do.	72 0 0	72 0 0			
	Do. Contingencies at Rs. 1½ do.	18 0 0	18 0 0			

* The Presidency Circle's Establishment of Vaccinators and Peons was taken over by the Municipality of Bombay in December 1870.

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.
B.—Paid by Municipalities.—*cont.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Central Circle—*continued.*					
1 Vaccinator at Mán, at Rs. 15 per mensem.	180 0 0	180 0 0	1,144	94·1	0 4 1
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Khanapoor, at Rs. 15 do	180 0 0	180 0 0	1,166	89·7	0 4 1
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Kurrar, at Rs. 15 do.	180 0 0	180 0 0	1,409	99·7	0 3 0
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Koregaum, at Rs. 15 do.	180 0 0	180 0 0	1,099	94·1	0 5 0
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Walwa, at Rs. 15 do.	180 0 0	180 0 0	720	96·3	0 6 3
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1½ do.	18 0 0	18 0 0			
1 Vaccinator at Kheir, at Rs. 15 do.	180 0 0	180 0 0	585	92·	0 8 9
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1 do.	12 0 0	12 0 0			
1 Vaccinator at Dhoolia, at Rs. 15 do.	180 0 0	180 0 0	796	99·6	0 5 1
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. .. do.	....	....			
1 Vaccinator at Jooneer, at Rs. 7 do.	84 0 0	84 0 0	119	84·6	0 13 10
Total....	4,788 0 0	4,788 0 0	15,817	94·	0 5 6
Southern Circle.					
1 Vaccinator at Belgaum, at Rs. 10 per mensem.	120 0 0	120 0 0			
Do. Peon do. at Rs. do.	....	....			
Contingencies do. at Rs. do.	....	....			
1 Vaccinator at Uthnee, at Rs. 15 do.	180 0 0	180 0 0			
1 Do. Peon do. at Rs. 4 do.	48 0 0	48 0 0			
Contingencies do. at Rs. do.	....	....			
1 Vaccinator at Hooblee, at Rs. 12 do.	144 0 0	144 0 0			
Do. Peon do. at Rs. do.	....	....			
Contingencies do. at Rs. do.	....	....			
1 Vaccinator at Gudduck, at Rs. 15 do.	180 0 0	180 0 0			
Do. Peon do. at Rs. do.	....	....			
Contingencies do. at Rs. do.	....	....			
1 Vaccinator at Beejapoor, at Rs. 10 do.	120 0 0	120 0 0			
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. 1 do.	12 0 0	12 0 0			
1 Vaccinator at Bagulkote, at Rs. 12 do.	144 0 0	144 0 0			
Do. Peon do. at Rs. do.	....	....			
Contingencies do. at Rs. 1 do.	12 0 0	12 0 0			
1 Vaccinator at Kulladghee, at Rs. 12 per mensem.	144 0 0	144 0 0			
Do. Peon do. at Rs. do.	....	....			
Contingencies do. at As. 8 do.	6 0 0	6 0 0			
Total....	1,182 0 0	1,182 0 0	3,535	93·	0 5 10

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.
B.—Paid by Municipalities—*contd.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Western Circle.					
1 Vaccinator at Tanna, at Rs. 20 per mensem.	240 0 0	240 0 0	632	94·4	0 6 8
Do. Peon do. at Rs. do.	....	....			
Contingencies do. at Rs. 1 do.	12 0 0	10 0 0			
1 Vaccinator for Oorun and Panwell, at Rs. 18 per mensem.	216 0 0	204 0 0	1,723	95·1	0 2 7
1 Do. Peon do. at Rs. 7 do.	84 0 0	56 0 0	33*	27·2*	
Contingencies do. at Rs. do.	....	....			
Total....	552 0 0	510 0 0	2,388	94·	0 3 3
Northern Circle.					
2 Vaccinators at Ahmedabad, at Rs. 20 and 12 per mensem.	384 0 0	384 0 0	5,429	94·1	0 1 9
2 Do. Peons do. at Rs. 6 and 7 do.	156 0 0	156 0 0			
Contingencies do. at Rs. 1 do.	12 0 0	12 0 0			
1 Vaccinator at Dholka, at Rs. 12 do.	144 0 0	144 0 0	852	95·0	0 4 5
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. ¼ do.	3 0 0	3 0 0			
1 Vaccinator at Verungaum, at Rs. 12 per mensem.	144 0 0	132 0 0	1,146	91·8	0 3 2
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies do. at Rs. ¼ do.	3 0 0	3 0 0			
1 Vaccinator at Broach, at Rs. 13 do.	156 0 0	104 0 0	511	97·4	0 6 1
1 Do. Peon do. at Rs. 6 do.	72 0 0	48 0 0			
Contingencies do. at Rs. 1 do.	12 0 0	8 0 0			
1 Vaccinator at Dhundooka, at Rs. 15 per mensem.	180 0 0	126 0 0	419	93·1	0 8 1
1 Do. Peon do. at Rs. 6 do.	72 0 0	51 0 0			
Contingencies do. at Rs. 2 do.	24 0 0	16 0 0			
1 Vaccinator at Neriad, at Rs. 18 do.	216 0 0	144 0 0	754	96·0	0 4 8
1 Do. Peon do. at Rs. 6 do.	72 0 0	54 0 0			
Contingencies do. at Rs. 1 do.	12 0 0	8 0 0			
Total....	1,806 0 0	1,537 0 0	9,111	96·0	0 2 9
Sind Circle.					
1 Vaccinator at Kotree at Rs. .. per mensem.	268 0 0	268 0 0	1,065	95·	0 5 8
Do. Peon do. at Rs. .. do.					
Contingencies do. at Rs. .. do.					
Total....	268 0 0	268 0 0	1,065	95·	0 5 8

* Indicates Re-vaccinations.

1	2			3			4	5	6		
	Sanctioned.			Expended.			Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.		
	Rs.	a.	p.	Rs.	a.	p.			Rs.	a.	p.
B.—Paid by Municipalities—*contd.*											
PRESIDENCY.											
1 Head Vaccinator, at Rs. 45 per mensem.	180	0	0	180	0	0					
5 Vaccinators, at Rs. 24 each do.	480	0	0	480	0	0					
4 Assistant Vaccinators, at Rs. 18 „ do.	288	0	0	288	0	0	4,580	87·	0	6	7
1 Apprentice do., at Rs. 14 „ do.	56	0	0	56	0	0					
11 Peons at Rs. 11 „ do.	484	0	0	396	0	0					
Contingencies	202	0	0	202	0	0					
Animal Vaccination	467	0	0	467	0	0					
Total	2,157	0	0	2,069	0	0	4,580	87·	0	6	7
Total paid by Municipalities	10,753	0	0	10,354	0	0	36,496	94·	0	6	5
C.—Paid by Local Funds.											
CENTRAL CIRCLE.											
1 Vaccinator at Mawul, at Rs. 13 per mensem.	156	0	0	156	0	0					
1 Do. Peon do. at Rs. 6 do.	72	0	0	72	0	0	2,596	96·4	0	1	7
Contingencies, at Rs. 1 do.	12	0	0	12	0	0					
1 Vaccinator at Bhimthurry, at Rs. 13 do.	156	0	0	114	0	0					
1 Do. Peon do. at Rs. 6 do.	72	0	0	56	0	0	592	82·9	0	6	2
Contingencies, at Rs. 1 do.	12	0	0	12	0	0					
1 Vaccinator at Indapoor, at Rs. 13 do.	156	0	0	156	0	0					
1 Do. Peon do. at Rs. 6 do.	72	0	0	72	0	0	1,523	96·8	0	2	8
Contingencies, at Rs. 1 do.	12	0	0	12	0	0					
1 Vaccinator at Veerdul, at Rs. 18 do.	216	0	0	150	0	0					
1 Do. Peon do. at Rs. 7 do.	84	0	0	59	0	0	1,911	100·	0	1	11
Contingencies, at Rs. 1 do.	12	0	0	8	0	0					
1 Vaccinator at Chaleesgaum, Rs. 18 do.	216	0	0	138	0	0					
1 Do. Peon do. at Rs. 7 do.	84	0	0	52	0	0	1,292	100·	0	2	5
Contingencies, at Rs. 1 do.	12	0	0	7	0	0					
1 Vaccinator at Tulloda, at Rs. 18 do.	216	0	0	79	0	0					
1 Do. Peon at do. at Rs. 7 do.	84	0	0	30	0	0	230	92·6	0	8	11
Contingencies, at Rs. 1 do.	12	0	0	4	0	0					
1 Vaccinator at Pachora, at Rs. 14 do.	168	0	0	117	0	0					
1 Do. Peon at do. at Rs. 7 do.	84	0	0	58	0	0	924	96·8	0	3	3
Contingencies, at Rs. 1 do.	12	0	0	7	0	0					
1 Vaccinator at Errundole, at Rs. 14 do.	168	0	0	91	0	0					
1 Do. Peon at do. at Rs. 7 do.	84	0	0	46	0	0	1,159	99·4	0	2	2
Contingencies, at Rs. 1 do.	12	0	0	6	0	0					
1 Vaccinator at Chopra, at Rs. 14 do.	168	0	0	87	0	0					
1 Do. Peon at do. at Rs. 7 do.	84	0	0	42	0	0	1,001	99·9	0	2	5
Contingencies, at Rs. 1 do.	12	0	0	7	0	0					
Total	2,448	0	0	1,650	0	0	11,228	96·8	0	2	6

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success excluding those unknown from the Total.	Cost of each successful case.
	Rs a. p.	Rs. a p.			Rs. a. p.
C.—Paid by Local Funds—*continued.*					
Southern Circle.					
3 Vaccinators in Dharwar Collectorate, at Rs. 15 each per mensem.	540 0 0	535 0 0			
3 Do. do. at Rs 14 do.	504 0 0	500 0 0			
6 Do. Peons, at Rs. 7 each do.	504 0 0	504 0 0			
Contingencies, at Rs. 6 do.	72 0 0	72 0 0			
1 Vaccinator in North Canara Collectorate, at Rs. 14 per mensem.	23 0 0	23 0 0			
1 Peon for do. at Rs. 7 do. ..	9 0 0	9 0 0			
Total....	1,652 0 0	1,643 0 0	6,717	96·	0 4 1
Western Circle.					
4 Vaccinators at Tanna, at Rs. 15 and 14 per mensem.	696 0 0	591 0 0			
4 Do. Peons do. at Rs. 7 each do..	336 0 0	238 0 0			
Contingencies at Rs. 8 do..	96 0 0	62 0 0			
3 Vaccinators at Colaba, at Rs. 15 do..	540 0 0	374 0 0			
3 Do. Peons do. at Rs. 6 each do.	216 0 0	175 0 0	13,023	95·7	
Contingencies at do. do.	....	49 0 0	* 646	* 71·9	
3 Vaccinators at Rutnagherry, at Rs. 15 per mensem.	540 0 0	355 0 0			
3 Do. Peons do. at Rs. 7 do...	252 0 0	154 0 0			
Contingencies, at Rs. 6 do...	72 0 0	38 0 0			
Total....	2,748 0 0	2,037 0 0	13,669	95·	0 2 8
Sind Circle.					
2 Native Assist. Supts., on Rs. 36 and 20 per mensem in addition to their pay as Government Vaccinators.	672 0 0	672 0 0			
7 1st Grade Vaccinators, at Rs. 15 each per mensem.	1,260 0 0	1,260 0 0			
6 2nd do. do. at Rs. 12 do...	864 0 0	864 0 0			
13 Vaccinators' Peons at Rs. 6 do...	936 0 0	936 0 0			
1 Office do. at Rs. 8 do...	96 0 0	96 0 0			
1 Office Clerk at Rs. 25 do...	300 0 0	300 0 0			
Supdt.'s allowance, at Rs. 150 do...	1,800 0 0	1,800 0 0			
Lymph Allowance	156 0 0	....			
	6,084 0 0	5,923 0 0	30,466	95·	0 3 3
Total paid by Local Funds....	12,932 0 0	11,258 0 0	62,080	95·	0 3 2

* Re-vaccinations.

1	2			3			4	5	6		
	Sanctioned.			Expended.			Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.		
D.—Paid by Native Chiefs or Landlords.	Rs.	a.	p.	Rs.	a.	p.			Rs.	a.	p.
Central Circle.											
1 Vaccinator by Aukulkote State, at Rs. 15 per mensem.	180	0	0	180	0	0	1,185	92·	0	3	5
1 Do. Peon do. at Rs. 3 do..	36	0	0	36	0	0					
Contingencies at Rs. 1 do..	12	0	0	12	0	0					
1 Vacr. by Peint State, at Rs. 17½ do..	210	0	0	210	0	0	1,341	87·8	0	4	0
1 Do. Peon do. at Rs. 6 do..	72	0	0	72	0	0					
Contingencies at Rs. 1 do..	12	0	0	12	0	0					
1 Vaccinator by Jutt, at Rs. 12 do..	144	0	0	144	0	0	843	95·9	0	3	9
1 Do. Peon do. at Rs. 4 do..	48	0	0	48	0	0					
1 Vacr. by Attapadee, at Rs. 12 do..	144	0	0	144	0	0	249	100·	0	12	4
1 Do. Peon do. at Rs. 4 do..	48	0	0	48	0	0					
1 Vacr. by Bhore, at Rs. 12 do..	144	0	0	144	0	0	920	99·2	0	3	4
1 Do. Peon do. at Rs. 4 do...	48	0	0	48	0	0					
1 Vacr. by Phulton, at Rs. 12 do..	144	0	0	144	0	0	1,173	90·2	0	2	11
1 Do. Peon do. at Rs. 4 do..	48	0	0	48	0	0					
	1,290	0	0	1,290	0	0	5,711	92·7	0	3	11
Southern Circle.											
1 Vaccinator by Sanglee, at Rs. 12½ per mensem.	150	0	0	150	0	0					
Do. Peon do. at Rs. 4½ do.	54	0	0	54	0	0					
Contingencies at Rs. 10 do.	120	0	0	120	0	0					
2 Vaccinators by Meeruj, at Rs. 27 do.	324	0	0	324	0	0					
2 Do. Peons do. at Rs. 8 do.	96	0	0	96	0	0					
Contingencies do. at Rs. 4¼ do.	51	0	0	51	0	0					
2 Vaccinators at Koorundwar, at Rs. 18 per mensem.	216	0	0	216	0	0					
2 Do. Peons do. at Rs. 8 do.	96	0	0	96	0	0					
Contingencies at Rs. 6¼ do.	75	0	0	75	0	0					
1 Vaccinator at Moodhole, at Rs. 14 do.	168	0	0	168	0	0					
1 Do. Peon do. at Rs. 4 do.	48	0	0	48	0	0					
Contingencies at Rs. 4 do.	48	0	0	48	0	0					
1 Vaccinator at Ramdroog, at Rs. 10 do.	120	0	0	120	0	0					
1 Do. Peon do. at Rs. 4 do.	48	0	0	48	0	0					
Contingencies at Rs. do.	....			....							
1 Vaccinator at Jumkhundee, at Rs. 10 per mensem.	120	0	0	120	0	0					
1 Do. Peon do. at Rs. 5 do.	60	0	0	60	0	0					
Contingencies at Rs. 6¼ do.	75	0	0	75	0	0					
In Kolapoor State.											
2 Vaccinators on Rs. 18 each per mens.	432	0	0	409	0	0					
1 Do. do. 16 do. do.	192	0	0	192	0	0					
2 Do. do. 15 do. do.	360	0	0	360	0	0					
5 Do. do. 14 do. do,	840	0	0	840	0	0					
1 Do. do. 13 do. do.	156	0	0	156	0	0					
10 Peons	564	0	0	558	0	0					
Contingencies	258	0	6	256	0	0					
1 Vaccinator in Savanoor at Rs. 15 ..	39	0	0	39	0	0					
1 Do. Peon do. at Rs. 7 ..	18	0	0	18	0	0					
Contingencies.....	2	0	0	2	0	0					
Total....	4,730	0	0	4,699	0	0	19,938	95·	0	4	0

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.
D.—Paid by Native Chiefs or Landlords—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
Western Circle.					
1 Vaccinator by Sawunt Waree State, at Rs. 15 per mensem.	180 0 0	180 0 0	4,484 270*	92·2 * 66·6	0 1 1
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
2 Extra Peons at Rs. 2 each do.	48 0 0	48 0 0			
Contingencies at Rs. do.	4 0 0	4 0 0			
1 Vacr. by Jowar State, at Rs. 16 do.	192 0 0	18 0 0	399	94·9	0 0 9
Do. Peons do. at Rs. do.	....	....			
Contingencies at Rs. do.	....	....			
Total....	496 0 0	322 0 0	5,153	91·	0 1 1
Northern Circle.					
1 Vaccinator paid by the Dewan Sahib of Pahlunpoor, at Rs. 22 per mensem.	264 0 0	259 0 9	3,110	94·0	0 2 6
1 Vaccinator at Rs. 12 do. do.	144 0 0	80 0 0			
2 Do. Peons at Rs. 5 each do.	120 0 0	100 0 0			
Contingencies at As. 8 do. do.	12 0 0	10 0 0			
1 Vaccinator paid by H. E. the Nawab of Rhadunpoor, at Rs. 18 per mensem	216 0 0	162 0 0	916	95·6	0 4 6
1 Do. Peon at Rs. 5 do. do.	60 0 0	45 0 0			
Contingencies (nothing)	....	....			
1 Vaccinator paid by the Thakores of Wow, Thurrad, Morvara, Santulpoor, Charchut, Warye, Jujham, Deodur, Bhabhur, Tehrwara, and Soeegaum, at Rs. 22 per mensem.	264 0 0	264 0 0	1,866	91·3	0 3 0
1 Do. Peon do. at Rs. 5 do.	60 0 0	60 0 0			
Paid from the Fine Fund of the Pahlunpoor Political Superintendency :—					
1 Vaccinator, at Rs. 20 per mensem.	240 0 0	160 0 0	2,618	98·2	0 2 10
1 Do. at Rs. 18 do.	216 0 0	144 0 0			
2 Do. Peons, at Rs. 6 each do.	144 0 0	144 0 0			
2 Vaccinators paid by H. H. the Maharajah of Edur, at Rs. 20 each per mensem.	480 0 0	466 0 0			
2 Do. Peons do. at Rs. 6 & 5 each do.	132 0 0	127 0 0			
Contingencies at Rs. 1 ,, do.	24 0 0	29 0 0			
Paid from subscription of the Thakores of Mahee Kanta :—					
3 Vaccinators at Rs. 15 each per mens.	540 0 0	540 0 0	5,156	94·6	0 1 11
Contingencies at Rs. 1 do. do. ..	36 0 0	36 0 0			
1 Vaccinator paid by H. E. the Nawab of Cambay, at Rs. 20 per mensem.	240 0 0	225 0 0	1,828	97·6	0 2 6
1 Do. Peon do. at Rs. 4½ do.	54 0 0	54 0 0			
1 Vaccinator paid by the Rajah of Dhurmpoor, at Rs 15 per mensem.	180 0 0	150 0 0	2,051	95·9	0 1 11
1 Do. Peon do. at Rs. 6 do.	72 0 0	72 0 0			
Contingencies at Rs. 1½ do.	18 0 0	15 0 0			
1 Vaccinator paid by the Rajah of Bansda, at Rs. 15 per mensem.	180 0 0	15 0 0	89	96·3	0 4 6
1 Do. Peon do. at Rs. 6 do.	72 0 0	6 0 0			
Contingencies at Rs. 1½ do.	18 0 0	1 0 0			
Total....	3,786 0 0	3,164 0 0	21,453	94·7	0 2 7

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.
	Rs. a. p.	Rs. a. p.			Rs. a. p.
D.—Paid by Native Chiefs or Landlords—*continued.*					
Sind Circle.					
1 Vaccinator by Meer Ali Murad, at Rs. 25 per mensem.	300 0 0	300 0 0			
1 Do. Peon do. at Rs. 7 do.	84 0 0	84 0 0			
Contingencies at Rs. do.	....	....			
Total....	384 0 0	384 0 0	1,757	86·	0 4 3
Kattiawar Circle.					
2 Native Asst. Supts., at Rs. 25 each per mensem	600 0 0	600 0 0			
4 Vaccinators at Rs. 25 do. ..	1,200 0 0	1,200 0 0			
2 Do. at Rs. 20 do. ..	480 0 0	480 0 0			
23 Do. at Rs. 15 do. ..	4,140 0 0	3,855 0 0			
4 Do. at Rs. 12 do. ..	576 0 0	576 0 0			
4 Do. at Rs. 10 do. ..	480 0 0	390 0 0			
1 Do at Rs. 8 do. ..	96 0 0	56 0 0			
48 Do. Peons at Rs. 5 and 8 do. ..	3,168 0 0	3,003 0 0			
Total....	10,740 0 0	10,160 0 0	47,995	94·	0 3 8
Rewa Kanta Circle.					
2 Vaccinators by Loonawarra, at Rs. 18 each per mensem.	432 0 0	430 0 0			
Do. Peons do. at Rs. 5¼ do.	126 0 0	126 0 0			
Contingencies at Rs. do.	....	....			
2 Vaccinators by Rajpeepla, at { Rs. 15-11-4 do.	188 8 0	188 8 0			
{ Rs. 18 5-3 do.	2,033 0 0	157 0 0			
2 Do. Peons do. at Rs. 4 5-10 do.	105 0 0	105 0 0			
Contingencies at Rs. do.	....	....			
2 Vaccinators by Barrea, at { Rs. 20 do.	240 0 0	240 0 0			
{ Rs. 18 do.	216 0 0	214 0 0			
2 Do. Peons do. at Rs. 5¼ do.	126 0 0	126 0 0			
Contingencies at Rs. do.	....	....			
1 Vaccinator by Balasinore, at Rs. 13 do.	157 0 0	151 0 0			
Do. Peons do. at Rs. do.	....	....			
Contingencies at Rs. do.	....	....			
1 Vaccinator by Chota Odeypoor, at Rs. 18 per mensem.	216 0 0	214 0 0			
1 Do. Peon do. at Rs. 3½ do.	42 0 0	42 0 0			
Contingencies at Rs. do.	....	....			
1 Vaccinator by Soonth and Kuddana, at Rs. 18 per mensem.	216 0 0	194 0 0			
Do. Peon do. Rs. do.	....	....			
Contingencies at Rs. do.	....	....			
1 Vaccinator by Sunkeira Mewas, at Rs. 18 per mensem.	216 0 0	210 0 0			
1 Do. Peon do. at Rs. 4 do.	48 0 0	48 0 0			
Contingencies at Rs. do.	....	....			
Total....	2,534 0 0	2,445 0 0	12,658	95·	0 3 5

1	2	3	4	5	6
	Sanctioned.	Expended.	Total Number Vaccinated.	Percentage of Success, excluding those unknown from the Total.	Cost of each successful case.
D.—PAID BY NATIVE CHIEFS OR LANDLORDS—*continued.*	Rs. a. p.	Rs. a. p.			Rs. a. p.
KUTCH CIRCLE.					
2 Vaccinators by H. H. the Rao of Kutch at { Rs. 12-10 / Rs. 7-12 } per mensem	151 8 0 93 0 0	151 8 0 93 0 0			
3 Peons, at Rs. 3-14 each do. ..	139 8 0	46 8 0			
Contingencies	289 0 0	289 0 0			
Total	673 0 0	580 0 0	648	92·	1 0 3
PAID BY H. H. THE GUIKOWAR OF BARODA.					
BARODA CIRCLE.					
1 Native Supt., at Rs. 27 per mensem.	324 0 0	324 0 0			
Travelling allowance at Rs. 27 do.	324 0 0	324 0 0			
Batta for 6 months, at Rs. 15 do.	90 0 0	90 0 0			
1 Assistant Vaccinator at Rs. 25 do.	300 0 0	300 0 0			
6 Vaccinators at Rs. 18 each do.	1,296 0 0	1,296 0 0			
11 Do. at Rs. 15 do. do.	1,980 0 0	1,980 0 0			
Contingent allowance to all Vaccinators, at Rs. 10 per mensem	120 0 0	120 0 0			
1 Clerk, at Rs. 30 do.	360 0 0	360 0 0			
2 Peons, at Rs. 9 do.	216 0 0	216 0 0			
18 Do. at Rs. 7 do.	1,512 0 0	1,512 0 0			
For Kattiawar Districts.					
1 Vaccinator at Rs. 35-10 per mensem.	427 8 0	427 8 0			
1 Do. at Rs. 22 do.	264 0 0	264 0 0			
3 Do. at Rs. 20 do.	720 0 0	720 0 0			
5 Peons at Rs. 8 do.	480 0 0	480 0 0			
Total Baroda Rupees....	8,413 8 0	8,413 8 0			
Equivalent in Company's Rupees....	7,085 0 0	7,085 0 0			
	7,085 0 0	7,085 0 0	23,659	95·6	0 5 2
Total paid by Native Chiefs and Landlords.	31,781 0 0	30,129 0 0	138,972	94·	0 3 9
Grand Total.....	1,73,067 0 0	1,70,051 0 0	491,605	95·	0 6 0

A.—VACCINE DEPARTMENT.

CIVIL.

STATEMENT No. IV.—Showing Results of the year 1870-71, *as compared with those of each of the previous five years, in Bombay Presidency.*

1	2	3	4	5				6	7	8	9
				Number of Vaccinators.							
				A.	B.	C.	D.				
Year.	Total Number of Persons Vaccinated.	Number Successful.	Ratio per cent. Successful excluding those Unknown from the Total.	Paid by State.	Paid from other sources.	Total.	Number previously employed as Inoculators or Native Practitioners.	Cost of whole Vaccine Establishment.	Cost of travelling allowance and contingencies.	Total Cost.	Cost of each successful case.
								Rs.	Rs.	Rs.	Rs. a. p.
1865.....	325,852	301,622	96·1	132	90	222	....*	....†	....†	....†	....†
1866.....	342,790	319,035	93·9	134	102	236	....	....†	....†	....†	....†
1867.....	356,446	333,638	96·7	134	118	252	....	....†	....†	....†	0 5 7
1868.....	393,865	370,216	97·3	134	126	260	....	....†	....†	111,524	0 4 2
1869-70 ..	424,774	397,622	96·7	134	141	275	....	1,18,389	17,812	136,201	0 5 6
1870-71 ..	491,605	447,048	95·	134	192	326	....	142,536	27,515	170,051	0 6 0

* We tried to employ Inoculators, but, as a rule, they would not remain, the restraint of regular service being irksome to them.

† These lines cannot be filled up correctly because we have no account of Municipalities and Native States expenditure.

B.

DISPENSARY VACCINATION.

B.—DISPENSARY VACCINATION.

STATEMENT No. V., showing particulars of Vaccination in the Dispensaries in each Circle of Superintendence in the Bombay Presidency during the Year 1870–71.

1	2	3		4		5		6	7	8	9													10				11		12
											Primary Vaccine Operations.													Re-Vaccinations.						
											A.		B.					C.					D.	A.	B.	C.	D.	Percentage of Successful Cases, excluding those "unknown" from the Total.		
											Sex.		Caste.					Age.		Result.										
Circle of Medical Superintendence.	Name and Rank of Superintendent of Dispensary.	No. of Native Superintendents of Vaccination attached to the Dispensary. 1870-71.	1869-70.	No. of Vaccinators attached to the Dispensary. 1870-71.	1869-70.	Total Number of Persons vaccinated. 1870-71.	1869-70.	Collectorate, Political Agency, or Native State for the population of which the Dispensary is provided.	Population of Area included in the last column.	Name of Dispensary or Civil Surgeoncy.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccinations.	In Re-Vaccinations.	Average Number of Persons vaccinated by each Vaccinator.
CENTRAL.	P. S. TURTBULL, M.D., Assistant Surgeon.	...	...	1	1	1,055	1,565	Poona Town	30,000	Civil Hospital ...	607	448	70	867	145	32	1	605	450	900	58	97	1,055	...	...	...	...	93·	...	1,136
		...	...	...	...	330	76	Do. „	80,000	Dispensary	180	128	4	275	19	9	1	107	201	121	135	52	308	...	22	...	22	47·2	...	
		...	...	1	1	1,018	949	Sholapoor „	60,000	Civil Hospital ...	529	489	11	649	332	...	26	650	368	948	70	...	1,018	...	...	...	...	93·	...	
		...	...	...	...	312	201	Do. „	28,000	Dispensary	152	160	6	243	60	1	...	127	185	281	23	8	312	...	...	...	...	92·4	...	
		...	...	1	1	1,100	1,045	Ahmednuggur „	39,000	Civil Hospital ...	574	481	22	732	166	6	129	731	324	999	39	17	1,055	2	34	9	45	96·3	5·6	
		...	...	...	1	...	476	Nassik „	.....	Do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	50	41	Punderpoor „	13,000	Dispensary	31	19	...	42	8	...	...	11	39	41	3	6	50	...	...	...	...	93·2	...	
		...	...	...	...	76	23	Peint „	300	Do.	33	15	...	48	...	...	...	19	29	20	23	5	48	20	8	...	28	46·6	71·5	
		...	...	...	...	215	167	Dhurumgaum „	3,873	Bheel Corps Hospital	84	33	3	96	18	...	...	29	88	111	6	...	117	89	9	...	98	94·8	90·8	
		...	...	...	...	41	52	Barsee „	14,442	Dispensary	24	17	...	40	1	...	...	15	26	29	7	5	41	...	...	...	...	80·	...	
		...	...	...	...	400	...	Errindole „	10,261	Do.	157	165	...	267	55	...	...	35	287	241	42	39	322	38	35	5	78	85·	52·	
		...	...	...	...	...	...	Joneer „	.....	Do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	41	...	Jumnair „	.....	Do.	12	29	...	40	1	...	...	13	28	41	...	...	41	...	...	...	...	100·	...	
		...	...	...	...	471	...	Parolla „	15,000	Do.	241	230	...	429	42	...	...	133	338	440	28	3	471	...	...	...	...	94·	...	
		...	...	...	...	45	...	Indapoor „	6,000	Do.	22	23	...	41	4	...	...	12	33	20	22	3	45	...	...	...	...	47·6	...	
		...	...	1	1	1,611	2,038	Sattara „	23,000	Civil Hospital ...	877	734	8	1,511	89	3	...	769	842	1,491	47	73	1,611	...	...	...	...	96·9	...	
		...	...	...	...	202	224	Kurrar „	10,000	Dispensary	117	85	...	184	18	...	...	115	87	182	17	3	202	...	...	...	...	91·4	...	
		...	...	...	...	22	41	Waie „	10,000	Do.	11	11	...	22	...	...	...	1	21	20	2	...	22	...	...	...	...	90·	...	
		...	...	...	...	113	46	Mahableshwur Hill Station ...	.....	Do.	50	54	19	60	23	1	1	11	93	83	19	2	104	7	2	...	9	81·	77·	
		...	...	...	...	23	...	Dhoolia	.....	Jail	16	7	...	18	4	...	1	3	20	23	...	...	23	...	...	...	...	100·	...	
Total.....		...	...	4	5	7,125	6,944		342,876		3,717	3,128	145	5,504	985	52	159	3,386	3,459	5,991	541	313	6,845	156	110	14	280	91·	58·	1,196
BERN.	ant Surgeon.	...	...	1	1	643	627	Belgaum Town...	30,000	Civil Hospital ...	358	281	19	486	115	...	19	299	340	622	13	4	639	...	...	...	...	98·	...	
		...	...	...	...	141	...	Do. „ ...	.....	Jail	...	...	...	...	...	...	...	...	...	...	...	...	...	22	119	...	141	...	...	
		...	...	...	...	64	179	Gokak „ ...	11,000	Dispensary	40	24	...	42	22	...	...	17	47	56	8	...	64	...	...	...	...	87·	...	
		...	...	1	1	848	835	Dharwar „ ...	30,000	Civil Hospital ...	428	416	11	627	192	...	14	118	726	763	57	24	844	...	4	...	4	93·	...	
		...	...	...	...	45	155	Gudduck „ ...	16,637	Dispensary	25	20	...	41	4	...	...	12	33	35	7	3	45	...	...	...	...	83·	...	
		...	...	...	...	...	258	Hoobleee „ ...	35,278	Do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

SOUTH-	J. RAJY, Assist.	...	...	1	1	793	733	Karwar Town.	19,437	Civil Hospital ...	455	342	113	538	92	...	4	57	749	541	203	53	797	...	...	...	...	73·	...	704
		...	...	...	...	30	157	Yellapoor ,,	1,130	Dispensary ...	16	12	...	20	8	...	...	3	25	20	7	1	28	2	...	...	2	77·	100·	
		...	...	...	...	27	27	Moondegode ,,	940	Do. ...	15	10	...	12	13	...	...	1	24	25	...	...	25	2	...	...	2	100·	100·	
		...	...	...	...	103	149	Honore ,,	4,586	Do. ...	69	33	13	77	12	...	...	24	78	90	12	...	102	1	...	...	1	88·	100·	
		...	...	...	...	88	101	Sircy ,,	4,064	Do. ...	53	35	9	66	13	...	...	7	81	64	12	12	88	...	...	...	...	84·	...	
		...	...	...	...	...	86	Hallial ,,	4,162	Do. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	...	41	Soopa ,,	454	Do. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	82	229	Bagulkote.....	12,000	Do. ...	58	24	...	64	18	...	...	35	47	73	9	...	82	...	...	...	...	89·	...	
Total...		...	...	3	3	2,864	3,577		160,688		1,517	1,197	165	2,023	489	...	37	573	2,141	2,259	328	97	2,714	27	123	...	150	87·	18·	761
WESTERN.	H. J. BLANC, M.D., Surgeon.	...	...	1	1	619	1,188	Rutnagherry Town.	20,789	Civil Hospital ...	339	280	...	498	107	...	14	144	475	443	129	56	619	...	...	...	...	71·5	...	619
		...	...	...	...	275	161	Alibagh ,, ...	4,704	Dispensary ...	136	137	1	266	3	...	3	67	206	264	9	...	273	2	...	...	2	95·7	100·	
		...	...	...	...	247	102	Bandora ,, ...	7,746	Do. ...	118	106	157	56	9	2	...	41	183	178	45	1	224	23	...	...	23	79·8	100·	
		...	...	...	...	77	39	Bhewndy ,, ...	9,130	Do. ...	45	32	...	48	29	...	...	10	67	52	23	2	77	...	...	...	...	69·3	...	
		...	...	...	...	113	43	Callian ,, ...	8,000	Do. ...	62	47	...	35	64	10	...	16	93	103	4	2	109	1	3	...	4	96·2	25·	
		...	...	...	...	96	149	Cooria ,, ...	2,714	Do. ...	64	25	4	62	10	2	2	8	81	55	28	6	89	3	1	3	7	66·2	75·	
		...	...	...	...	413	348	Dapoolee ,, ...	8,972	Do. ...	216	188	4	343	57	...	...	64	340	334	70	...	404	7	2	...	9	82·6	77·7	
		...	...	...	...	29	64	Oorun ,, ...	6,216	Do. ...	16	10	2	12	12	...	...	4	22	17	8	1	26	2	1	...	3	68·	66·6	
		...	...	...	...	406	476	Sawunt Waree ,, ...	7,570	Do. ...	177	135	14	217	81	...	...	93	219	244	65	3	312	59	34	1	94	73·9	63·4	
		...	...	...	...	463	296	Vingorla ,, ...	10,618	Do. ...	253	210	10	436	17	...	...	243	220	453	10	...	463	...	...	...	...	97·8	...	
		...	...	...	...	16	68	Matheran Hill Station	Variable	Do. ...	9	7	...	16	...	...	...	5	11	16	...	...	16	...	...	...	...	100·	...	
Total...		...	...	1	1	2,754	2,934		86,459		1,435	1,177	192	1,989	398	14	19	695	1,917	2,159	382	71	2,612	97	41	4	142	84·9	70·3	619
NORTHERN.	M. B. COLAH, M.D., (Uncovenanted).	...	...	1	1	1,602	1,636	Surat Town	90,000	Civil Hospital ...	852	750	16	1,188	288	63	47	670	932	1,371	73	158	1,602	...	...	...	...	91·9	...	1,602
		...	...	1	1	384	1,131	Broach ,,	30,000	Do. ...	220	164	1	246	115	22	...	219	165	342	5	37	384	...	...	...	...	99·4	...	384
		...	...	1	1	658	951	Kaira ,,	12,539	Do. ...	354	283	...	536	69	1	31	501	136	457	115	65	637	5	...	16	21	79·8	100·	658
		...	...	...	...	171	151	Bulsar ,,	8,000	Dispensary ...	89	82	4	112	21	33	1	100	71	136	30	5	171	...	...	...	...	82·4	...	
		...	...	...	...	168	199	Nowsaree ,,	1,385	Victoria ,, ...	95	73	...	130	25	13	...	93	75	158	4	6	168	...	...	...	...	97·5	...	
		...	...	...	...	376	542	Gogo ,,	8,227	Dispensary ...	193	175	6	226	130	...	...	172	199	345	26	...	371	...	5	...	5	92·9	...	
		...	...	...	...	176	200	Sadra ,,	3,037	Mahee Kanta Agency Dispensary ...	73	53	...	118	8	...	...	49	77	91	24	11	126	25	21	4	50	79·1	54·3	
		...	...	...	...	97	144	Veerumgaum ,,	18,077	Dispensary ...	50	45	...	91	4	...	...	64	31	88	6	1	95	...	...	...	...	93·6	...	
		...	...	...	...	115	117	Dhoika ,,	20,000	Do. ...	51	62	...	88	25	...	...	84	29	97	12	4	113	1	1	...	2	88·9	50·	
		...	...	...	...	44	...	Samund ,,	6,010	Do. ...	24	16	...	38	2	...	...	22	18	33	7	...	40	1	3	...	4	82·5	25·	
		...	...	...	...	67	68	Prantaje ,,	8,000	Do. ...	39	23	...	56	11	...	...	53	14	53	10	4	67	...	...	...	...	84·1	...	
		...	...	...	...	23	109	Dhundhooka ,,	9,608	Do. ...	12	11	...	12	11	...	...	16	7	10	4	9	23	...	...	...	...	71·4	...	
		...	...	...	...	145	168	Dhollera ,,	22,158	Do. ...	74	46	...	109	11	...	...	61	59	88	22	10	120	16	5	4	25	80·	79·	
		...	...	...	...	7	142	Kuppudvunj ,,	12,000	Do. ...	4	3	...	7	...	...	...	4	3	7	...	...	7	...	...	...	...	100·	...	
		...	...	...	...	...	...	Mhoondha ,,	7,946	Do. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	74	278	Dakore ,,	7,348	Do. ...	38	36	...	73	1	...	...	41	33	67	5	2	74	...	...	...	...	93·	...	
		...	...	...	...	6	89	Neriad ,,	20,000	Do. ...	3	3	...	6	...	...	...	3	3	6	...	...	6	...	...	...	...	100·	...	
		...	...	...	...	49	179	Borsud ,,	11,176	Do. ...	19	21	...	39	1	...	...	31	9	40	...	...	40	...	...	...	...	100·	...	
		...	...	...	...	60	12	Jumboosur ,,	11,773	Do. ...	37	23	...	47	13	...	...	25	35	60	...	...	60	...	...	...	...	100·	...	
		...	...	...	...	38	8	Elao ,,	2,000	Do. ...	17	21	...	30	...	8	...	10	28	30	5	3	38	...	...	...	...	85·7	...	
		...	...	...	...	101	175	Randeir ,,	7,000	Do. ...	41	60	...	88	11	2	...	41	60	85	13	3	101	...	...	...	...	86·7	...	
		...	...	...	...	45	39	Mandvee ,,	3,563	Do. ...	21	24	...	45	...	...	...	15	30	28	6	11	45	...	...	...	...	82·3	...	
		...	...	...	...	8	9	Bardolee ,,	3,695	Do. ...	4	4	...	8	...	...	...	4	4	6	...	2	8	...	...	...	...	100·	...	
		...	...	...	...	28	25	Chicklee ,,	2,500	Do. ...	15	10	...	25	...	...	...	21	4	25	...	...	25	...	...	3	3	100·	...	
		...	...	...	...	22	15	Pardee ,,	4,003	Do. ...	11	10	...	21	...	...	...	3	18	11	5	5	21	1	...	...	1	68·7	100·	
Total...		...	...	3	3	4,453	6,437		330,045		2,339	2,003	27	3,339	755	142	79	2,302	2,040	3,634	372	336	4,342	49	35	27	111	90·7	58·3	881

1	2	3		4		5		6	7	8	9															10				11		12
											Primary Vaccine Operations.															Re-Vaccinations.				Percentage of Successful Cases, excluding those "unknown" from the Total.		
											A.		B.					C.					D.									
											Sex.		Caste.					Age.		Result.												
Circle of Medical Superintendence.	Name and Rank of Superintendent of Dispensary.	No. of Native Superintendents of Vaccination attached to the Dispensary. 1870-71.	1869-70.	No. of Vaccinators attached to the Dispensary. 1870-71.	1869-70.	Total Number of Persons vaccinated. 1870-71.	1869-70.	Collectorate, Political Agency, or Native State for the population of which the Dispensary is provided.	Population of Area included in the last column.	Name of Dispensary or Civil Surgeoncy.	Males.	Females.	Christian.	Hindoo.	Mussulman.	Parsee.	Other Caste.	Under 1 year.	Above 1 year.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	Successful.	Unsuccessful, including those doubtful.	Unknown.	Total.	In Primary Vaccinations.	In Re-Vaccinations.	Average Number of Persons vaccinated by each Vaccinator.
Sind.	J. Williams, M.D., Assistant Surgeon.	...	...	1	1	2,765	3,933	Kurracheee Town	100,000	Civil Hospital ...	1,697	1,068	61	805	1,761	34	104	1,036	1,729	2,405	209	151	2,765	...	...	...	...	92·	...	2,765
		...	...	...	...	...	240	Do. Jail...	.....	Jail do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		...	...	...	...	160	38	Do. ...	.....	Dispensary ...	145	...	...	15	130	...	...	...	145	87	58	...	145	7	8	...	15	60·	46·	
		...	...	1	1	2,060	2,162	Hydrabad Town.	40,000	Civil Hospital...	1,332	722	41	1,009	977	...	27	1,025	1,029	2,024	18	12	2,054	5	1	...	6	99·	99·	2,060
		...	...	1	1	1,666	1,224	Shikarpoor ,,	45,000	Do.	941	608	2	734	804	...	9	1,093	456	1,351	111	87	1,549	54	34	29	117	92·	61·	1,666
		...	...	...	...	35	180	Ketty Bunder ,,	2,000	Dispensary ...	20	15	...	10	16	...	...	6	29	18	17	...	35	...	...	...	...	51·	...	
		...	...	...	...	111	165	Tatta ,,	6,000	Do. ...	65	46	...	63	48	...	...	41	70	85	22	4	111	...	...	...	...	79·	...	
		...	...	...	...	35	10	Jurruck ,,	2,000	Do. ...	22	13	...	9	26	...	...	9	26	35	...	...	35	...	...	...	...	100·	...	
		...	...	...	...	164	75	Bola Khan's Thanna	1,600	Do. ...	88	76	...	33	131	...	...	26	138	159	5	...	164	...	...	...	...	97·	...	
		...	...	...	...	121	45	Sehwan Town ...	5,000	Do. ...	67	54	...	37	84	...	...	32	89	116	4	1	121	...	...	...	...	96·	...	
		...	...	...	...	32	69	Mehur ,, ...	2,500	Do. ...	18	14	...	20	12	...	...	14	18	30	2	...	32	...	...	...	...	94·	...	
		...	...	...	...	501	371	Larkhana ,, ...	6,000	Do. ...	273	218	...	225	266	...	...	309	182	459	32	...	491	10	...	...	10	93·	100·	
		...	...	...	...	...	615	Sukkur ,, ...	12,000	Do. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	329	289	Rohree ,, ...	10,000	Do. ...	181	148	...	197	132	...	...	222	107	324	...	5	329	...	...	...	...	100·	...	
		...	...	...	...	158	97	Taroosha ,, ...	6,000	Do. ...	85	73	...	113	45	...	...	92	66	157	1	...	158	...	...	...	...	100·	...	
		...	...	...	...	135	140	Halla ,, ...	4,500	Do. ...	81	54	...	38	97	...	...	61	74	135	...	...	135	...	...	...	...	100·	...	
		...	...	...	...	79	149	Allyar Tanda.....	6,000	Do. ...	56	23	...	59	20	...	...	...	79	43	27	9	79	...	...	...	...	61·	...	
		...	...	...	...	193	204	Mahomed Khan's Tanda.	4,500	Do. ...	110	69	...	87	92	...	...	35	144	146	33	...	179	4	10	...	14	81·	29·	
		...	...	...	...	161	110	Meerpoor Buttora Town.	4,500	Do. ...	60	72	...	43	89	...	...	62	70	122	3	7	132	7	16	6	29	96·	30·	
		...	...	...	...	402	8	Mittee ,,	2,000	Do. ...	169	145	...	282	32	...	...	33	281	297	12	5	314	41	47	...	88	96·	46·	
		...	...	...	...	232	30	NuggurParkur ,,	1,200	Do. ...	149	70	...	197	22	...	...	57	162	208	7	4	219	13	...	...	13	96·	100·	
		...	...	...	...	...	7	Oomerkote ,,	5,000	Do. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		...	...	...	...	37	143	Kippra ,,	2,000	Do. ...	22	14	...	24	12	...	...	15	21	35	1	...	36	1	...	...	1	100·	100·	
		...	...	...	...	...	...	Jacobabad ,,	15,000	Do. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Total...		...	...	3	3	9,376	10,304		282,800		5,581	3,502	104	4,009	4,796	34	140	4,168	4,915	8,236	562	285	9,083	142	116	35	293	93·	55·	2,163

KATTIAWAR. Surgeon E. R. BUTLER; (Acting) Surgeons SHEPHERD and BLOMFIELD.	...	...	...	1	...	1,215	Rajkote Town...	.....	Civil Hospital ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	38	4	Wudwan	500	Dispensary	17	21	...	21	8	...	9	14	24	37	1	...	38	...	...	...	...	97·3	...		
	...	...	...	...	102	96	Joonaghur	1,000	Manickwara do.	50	52	...	88	14	...	...	15	87	95	7	...	102	...	...	...	...	93·1	...		
	...	...	...	...	19	...	Bhownuggur ...	500	Sonapoora do.	11	8	...	18	1	...	...	12	7	17	2	...	19	...	...	...	...	89·4	...		
Total ...	...	...	...	1	159	1,315		2,000		78	81	...	127	23	...	9	41	118	149	10	...	159	...	...	...	...	93·7	...	...	
ADEN. J. JAMES, M.D., Surgeon.	...	...	1	1	691	844	Aden	25,000	Civil Hospital...	525	166	26	69	208	37	351	150	541	582	109	...	691	...	...	...	...	84·2	...	691	
PRESIDENCY.	...	...	...	...	...	63	Bombay.....	.....	House of Correction	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	...	...	...	...	...	60	Do.	.....	County Jail	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
REWA KANTA. Assistant Surgeon T. CODY.	...	...	...	...	116	...	Godra Town.....	.....	Dispensary	60	55	...	49	62	...	4	86	29	93	20	2	115	1	...	...	1	82·3	100·		
Grand Total.	...	...	15	17	27,538	32,478				15,252	11,309	659	17,109	7,716	279	798	11,401	15,160	23,133	2,324	1,104	26,561	472	425	80	977	91·	52·6	1,167	

TABLE No. VI.

VACCINATION in the BOMBAY ARMY.

		Number Vaccinated.		
		Europeans.	Natives.	Total.
European Army for 1870-71	Regiments	710	7	717
	Lines	..	209	209
	Bazaars	..	34	34
	Total	710	250	960
Native Army for 1870-71	Regiments	16	2,155	2,171
	Lines	2	319	321
	Bazaars	2	92	94
	Cantonment Bazaars	149	2,480	2,629
	Ordnance and other Departments	12	95	107
	Staff and Details	..	1,276	1,276
	Total	181	6,417	6,598
	Grand Total	891	6,667	7,558

TABLE No. VII.

SUMMARY of Employment Returns of Superintendents of Vaccination for the Year 1870-71.

CENTRAL CIRCLE.

Superintendent.— Assistant Surgeon P. S. TURNBULL, M.D.
" " W. R. GORDON, M.B. (*Acting.*)

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Vaccinated Children inspected.	SUMMARY OF REMARKS.
April 1870.	8	147	19	1,178	32 Villages visited and inspected.
May "	9	158	18	622	26 ditto ditto.
June "	..	..	..	..	
July "	1	12	6	..	Learning Animal Vaccination in Poona.
August "	1	18	9	..	Ditto and practising it.
September "	2	50	8	72	3 Villages visited and inspected.
October "	7	192	16	850	20 ditto ditto.
November "	11	159	20	1,863	35 ditto ditto.
December "	8	357	17	1,143	18 ditto ditto.
January 1871	7	178	18	840	27 ditto ditto.
February "	12	176	22	1,276	29 ditto ditto.
March "	14	199	21	3,965	62 ditto ditto.
Total..	80	1,637	174	11,809	243 ditto ditto.

SOUTHERN CIRCLE.

Superintendent.—Assistant Surgeon J. RABY.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Vaccinated Children inspected.	SUMMARY OF REMARKS.
April 1870.	5	134	10	318	16 Villages visited and inspected.
May ,,	6	83	6	37	3 ditto ditto.
June ,,	4	59	4	1	1 ditto ditto.
July ,,	11	181	11	..	
August ,,	1	12	3	94	1 ditto ditto.
September ,,	1	12	1	8	1 ditto ditto.
October ,,	9	381	9	..	Learning Animal Vaccination in Bombay.
November ,,	9	452	16	271	17 Villages visited and inspected.
December ,,	10	208	18	682	37 ditto ditto.
January 1871.	8	236	20	1,621	50 ditto ditto.
February ,,	10	235	16	1,278	29 ditto ditto.
March ,,	11	199	19	2,269	32 ditto ditto.
Total....	85	2,183	133	6,579	187 ditto ditto.

NORTHERN CIRCLE.

Superintendent.—MUNCHERJEE BYRAMJEE COLAH, M.D.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Vaccinated Children inspected.	SUMMARY OF REMARKS.
April 1870.	5	212	18	1,177	39 Villages visited and inspected.
May ,,	6	253	24	2,647	50 ditto ditto.
June ,,	5	166	20	1,765	28 ditto ditto.
July ,,	3	279	6	..	Learning Animal Vaccination in Bombay.
August ,,	2	172	2	82	2 Villages visited and inspected.
September ,,	2	144	4	..	Practising Animal Vaccination in Surat.
October ,,	..	..	..	27	Vaccinated in Surat from animal lymph.
November ,,	7	364	18	2,338	39 Villages visited and inspected.
December ,,	10	320	24	2,194	55 ditto ditto.
January 1871.	10	373	25	1,092	46 ditto ditto.
February ,,	7	312	22	2,461	69 ditto ditto.
March ,,	6	262	25	2,445	62 ditto ditto.
Total....	63	2,857	188	17,128	409 ditto ditto.

WESTERN CIRCLE.

Superintendent.—Surgeon H. J. BLANC, M.D.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Vaccinated Children inspected.	SUMMARY OF REMARKS.
April 1870.	5	221	11	614	24 Villages visited and inspected.
May ,,	1	53	1	..	
June ,,	1	70	1	..	Went to Poona to practise Animal Vaccination.
July ,,	..	..	..	..	Practising Animal Vaccination in Poona.
August ,,	..	..	..	87	Ditto ditto.
September ,,	..	..	..	34	Ditto ditto.
October ,,	3	250	7	641	14 Villages visited and inspected.
November ,,	8	110	12	1,380	13 ditto ditto.
December ,,	8	156	18	2,059	26 ditto ditto.
January 1871.	13	175	15	1,999	32 ditto ditto.
February ,,	13	286	17	2,068	31 ditto ditto.
March ,,	8	157	17	1,314	60 ditto ditto.
Total..	62	1,478	99	10,196	200 ditto ditto.

SIND CIRCLE.

Superintendent.—Assistant Surgeon J. WILLIAMS, M.D.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Vaccinated Children inspected.	SUMMARY OF REMARKS.
April 1870.	7	620	13	472	16 Villages visited and inspected.
May ,,	1	119	2	91	4 do. do.
June ,,	..	220	..	..	Went to Guadur on special duty.
July ,,	..	330	..	..	Returned from Guadur.
August ,,	5	148	4	235	3 Villages visited and inspected.
September ,,	..	605	..	..	Went to Bombay to learn Animal Vaccination.
October ,,	..	610	..	..	Returned from Bombay.
November ,,	18	366	21	139	12 Villages visited and inspected.
December ,,	18	422	24	4,032	175 ditto ditto.
January 1871.	21	477	27	5,042	162 ditto ditto.
February ,,	20	457	24	8,587	160 ditto ditto.
March ,,	..	..	..	..	
Total....	90	4,374	115	18,598	532 ditto ditto.

KATTIAWAR CIRCLE.

Superintendents.—Surgeons BLOMFIELD and SHEPHERD (Acting).

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Vaccinated Children inspected.	SUMMARY OF REMARKS.
April 1870.	5	144	13	693	13 Villages visited and inspected.
May ,,	..	..	..	..	
June ,,	..	..	..	..	Learning Animal Vaccination in Bombay.
July ,,	..	..	..	..	
August ,,	..	..	..	..	
September ,,	..	..	..	..	
October ,,	..	..	..	..	
November ,,	11	322	26	2,724	40 Villages visited and inspected.
December ,,	4	233	24	1,352	35 ditto ditto.
January 1871.	8	287	28	2,445	45 ditto ditto.
February ,,	10	261	22	1,911	42 ditto ditto.
March ,,	11	309	26	3,043	39 ditto ditto.
Total....	49	1,556	139	12,168	214 ditto ditto.

REWA KANTA CIRCLE.

Superintendent.—Assistant Surgeon CODY.

MONTHS.	Number of Stations visited.	Distance travelled in miles.	Number of travelling days.	Number of Vaccinated Children inspected.	SUMMARY OF REMARKS.
April 1870.	..	..	..	..	
May ,,	..	..	..	..	
June ,,	..	..	..	..	
July ,,	..	..	..	..	
August ,,	..	486	..	..	Dr. Cody learning Animal Vaccination in Poona before joining.
September ,,	..	..	..	..	
October ,,	..	..	..	43	1 Village visited and inspected.
November ,,	..	..	..	45	1 ditto ditto.
December ,,	9	197	19	1,291	44 ditto ditto.
January 1871.	10	172	13	638	32 ditto ditto.
February ,,	4	105	11	875	35 ditto ditto.
March ,,	8	160	15	1,232	33 ditto ditto.
Total....	31	1,120	58	4,124	146 ditto ditto.

Vaccination.

No. 2399.

GENERAL DEPARTMENT.

Bombay Castle, 30th August 1871.

Letter from the Inspector General, Indian Medical Department, No. 2817, dated 24th July 1871—Submitting, with his remarks, the report of the Superintendent General of Vaccination for the year 1870-71.

RESOLUTION.—During the year 1870-71 the total number of vaccine operations in civil life amounted to 519,143; of these 489,024 were primary vaccinations, and 30,119 re-vaccinations.

The increase in the number of vaccinations performed during the year under report over those in the preceding year amounted to 38,898.

Assuming the population of the Presidency, including Native States, to be 21,000,000, Dr. Pinkerton considers the number of primary vaccinations should not be less than 600,000 a year.

2. The per-centage of success in primary vaccinations is stated to be 96·2, and in re-vaccinations 73·2.

The following is the per-centage of castes primarily vaccinated:—Christians 0·5, Hindoos 74·9, Mussulmans 18·7, Parsees 0·2, and other castes 5·6.

3. In all the services 326 vaccinators have been employed, and the total cost of the Department has amounted to Rs. 1,70,051. During the preceding year 275 vaccinators were entertained, and the total cost of the Department was Rs. 1,36,201. There has thus been an increase of 51 vaccinators, and of Rs. 33,850 in the amount expended.

The following table shows the proportion in which the total was paid by—

	Total Cost.		Amount of increase expended.
1st.—Government	1,18,310	...	17,512
2nd.—Municipalities	10,354	...	3,660
3rd.—Local Funds.....	11,258	...	3,914
4th.—Native States	30,129	...	8,764
	1,70,051	...	33,850

Each successful vaccination has on an average cost six annas.

4. It is satisfactory to find that the number of vaccinators entertained by Municipalities has increased. There are now 51, being an increase of 18

over those maintained in the preceding year. The Municipality of Bombay has during the year under report engaged 11. The Superintendent General recommends that Municipal assistance should be given in the form of a money subsidy, and that the Municipalities should have no control over the vaccinators. His Excellency in Council is inclined to doubt the expediency of this proposal, and considers that much good may be effected, especially in Mofussil towns, by the direct personal interest the members of the Municipality may take in the way in which the vaccinator carries on his duties. It is not long ago that Dr. Pinkerton reported an instance of the Municipality withholding a vaccinator's pay because they considered he had been idle.

5. During the year under report the scheme for the entire re-organization of the Department has been matured, and has since come into operation. The principal features in the new organization are the multiplication of the number of vaccinators and the exercise of a closer supervision over them.

Besides those employed by Municipalities, each Talooka will have a separate vaccinator for the benefit of the rural population, and a competent well-paid Native Assistant Superintendent will be appointed to each Collectorate.

These arrangements, from which the very best results may confidently be anticipated, have been brought about by the Local Funds paying for the Talooka or rural vaccinators, and thus enabling the additional Superintendents to be paid for by Government. His Excellency in Council desires to express his acknowledgments to those Presidents of the Local Funds Committees who have readily acquiesced in and given their support to this most important change.

6. The Collectors and their Assistants have invariably co-operated heartily with the Vaccination Department, but they will now have a more direct interest in seeing that the Local Funds contributions are utilized to the utmost. Perhaps the most useful and direct form which their assistance can take is that of seeing that the village officers keep the lists and vaccination registers correctly and punctually. They should also insist upon timely intimation being given of the outbreak of small-pox in any particular locality, in order that the attention of the Assistant Superintendent may be specially directed to its suppression.

7. The success of the new system will entirely depend upon the manner in which the European Superintendents exercise a direct personal control over the Assistants. The Superintendent General expresses himself satisfied

with the manner in which the Superintendents have travelled over and visited their charges. But His Excellency in Council considers that the present Table No. VII. requires amendment, and the extent of attention that has been paid by the Superintendent to each Collectorate and to each Talooka should be shown. Several Collectorates have apparently not been visited at all during the past year.

8. His Excellency in Council has read with interest Mr. Anunta Chundroba's account of his proceedings in connection with the introduction of animal vaccination into the Town of Bombay. The zeal with which he has acted is deserving of much praise. The Secretary of State will be requested to communicate through the proper channel the thanks of this Government to Mr. Warlomont, of Brussels, for his kindness in furnishing supplies of animal lymph.

9. The Inspector General, Indian Medical Department, has noticed with dissatisfaction the little progress that has been made in Dispensary vaccination. He is requested to issue a Circular to all Medical Officers in charge of Dispensaries informing them that vaccination is not one of the least important parts of their duty, and that inattention to it will be severely noticed. It would be well perhaps to require duplicate copies of the periodical returns to be sent direct to his Department.

10. There is no reason to suppose that the practice of inoculation is prevalent, and with the increased facilities now offered for vaccination, it is hoped that it will soon entirely disappear.

A Bill for rendering vaccination compulsory in the Town and Island of Bombay is now under the consideration of Government.

11. His Excellency in Council has much pleasure in according his entire satisfaction at the manner in which Dr. Pinkerton and the officers under him have conducted their duties.

(Signed) W. H. CROWE,
For Chief Secretary to Government.

To

The Inspector General, Indian Medical Department.
The Revenue Commissioner, N. D.
The Revenue Commissioner, S. D.
The Commissioner in Sind.
The Municipal Commissioner for the City of Bombay.

00133638

Digitized with financial assistance from

Government of Maharashtra

on 01 February, 2020